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The MRP-Reporter Program: A Data Extraction and Reporting Tool for the Mark Recovery Program Database

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ABSTRACT

Kuhn, B. R. 1988. THE MRP-REPORTER PROGRAM: A data extraction and reporting tool for the Mark Recovery Program database. Can. Tech. Rep. Fish. Aquat. Sci. 1625: 145 p.

This manual documents the concepts and methods that the MRP-REPORTER user access software uses for extracting and manipulating data from the Mark Recovery Program database. The software is designed to provide access to all components of the database, hence the software is very complex. Thorough documentation is essential for users to know (1) what features are available and (2) how to access these features.

The manual assumes some knowledge of the structure and content of the database and therefore does not go to great lengths to describe it. The document presents the program's user interface by embedding a "snapshot" of an actual computer display and discussing the figure. Detailed descriptions of the report formats available are provided with simple report examples. Finally an appendix is dedicated to describing the database KEYWORDS which provide restriction capabilities for all database fields.

RÉSUMÉ

Kuhn, B. R. 1988. THE MRP-REPORTER PROGRAM: Logiciel de recherche et d'édition pour la base de données du programme de reprise de poissons étiquetés. Rapport technique canadien des sciences halieutiques et aquatiques. 1625: 145 p.

Cet ouvrage décrit les concepts et méthodes appliqués dans le logiciel MRP-Reporter pour la recherche et la manipulation de données dans la base de données du programme de reprise de poissons étiquetés. Le logiciel, qui doit offrir l'accès à toutes les composantes de la base de données, est très complexe. Une documentation complète est essentielle pour que les utilisateurs sachent: 1) quelles fonctions sont disponibles et 2) comment accéder à ces fonctions.

L'auteur suppose que le lecteur a déjà une idée de la structure et du contenu de la base de données, aussi n'en donne-t-il pas une description en règle. L'interface utilisateur du programme est représentée dans l'ouvrage par un "instantané" d'une page écran réelle, commentée. Des descriptions détaillées des formats d'états disponibles sont données avec des échantillons d'états simples. En annexe, on retrouve une liste des mots-clés qui permettent de restreindre la recherche de toutes les zones de la base de données.

FOREWORD

By Brian R. Kuhn

When I became involved with the Mark Recovery Program (MRP) database, the data record formats were well defined and relatively stable and the data entry process was rigid enough to ensure only "clean" data records are entered into the database. The task to design, develop, and implement the MRP database, was undertaken by Louis Lapi of the Salmon Section at the Pacific Biological Station (PBS). Louis made it possible to access the MRP data for salmon stock assessment and management. Marc Hamer of the Computing Services group at PBS was enlisted as the Analyst/Programmer in charge of the database implementation process. Marc also contributed his expertise to the design and development of the database data structures and organization. Marc wrote the computer subroutines that are the foundation stones of the MRP-Reporter user access software. These subroutines provide a low level interface to all of the data stored in the MRP database; to gain access to MRP data, a programmer must utilize these subroutines.

In February of 1985, I was asked to design, develop, and implement a user access and reporting computer program as a "front end" to the MRP database. One of the MRP user committees had drafted several report formats that they wished to see implemented for accessing the MRP database. With these report formats in hand, I began my design of the MRP-Reporter program. The scope of the program was enlarged to encompass all general MRP database access software written by myself, Louis Lapi, Marc Hamer, and others, thus the MRP users would only need to remember one VAX/VMS command, "MRP", to gain access to the available programs. The MRP-Reporter has undergone several generations of revision since the first version was released sometime in the summer of 1985 and is now currently available as version 3.

During the past few years, as new versions of the program were released, programming bugs were inevitably reported by users of the software. The users participated in this tiresome debugging process. Some of the users who played an important role in the testing process are:

> Sue Leaman, Neil Williscroft, Louis Lapi, Maureen Holmes, Gail Hudson, Paul Starr, Brian Riddell, Tim Mulligan, Marc Hamer, Doug Schwenning, and Carol Cross.

Keith Abbott, an English instructor, in the school district of Nanaimo, assisted me through five drafts of this manual. Keith's suggestions and corrections helped me produce a more polished manual.

INTRODUCTION

1. Some background information

When a hatchery facility releases a group of fish with tags, a unique tag code is used for each juvenile in the tagged group. Various pieces of information are recorded for a tagged release and these data are known as "release data".

The tagged fish which are recovered in the fishery, have the coded wire tag extracted from their snout and the code read at head decoding laboratories. Geographical, time of capture, and biological data are recorded for each recovered tag code and are defined as "observed recovery data".

For commercial data, the ratio of the number of fish sampled to the total catch is multiplied by the total number of observed recoveries for a given time/catch region interval and the result is known as "estimated recovery data". For sport data, an Angler Awareness Factor is used for estimated recoveries and escapement data uses the escapement to sample ratio. If estimated recovery numbers are further multiplied by the ratio of the number of fish released to the number of fish tagged for each tag, the resulting numbers are called "expanded recovery data".

A computer database was designed to store the data so the department could analyze and assess the tagging data. The data should answer questions about the impact of hatchery reared salmon on wild stocks. Using this database, Canada and the U.S.A. can determine catch quotas for each other using tagging data to calculate the number of foreign fish being recovered. This manual is written to assist user's of the database access software, the MRP-Reporter (Mark Recovery Program Reporter).

2. What is the MRP-Reporter program?

The program consists of three distinct parts: an interactive menu driven user interface, a control program which creates reports based on selection criteria specified by a user via a menu session, and access to data extraction programs or utilities written by various MRP support staff.

Using the menu interface to specify a standard report, flat file, or spreadsheet, will create a VAX VMS command job file (extension .COM). This file contains the command to run the report control program as well as all of the user specified selections/restrictions needed to create the requested report. It is important to note that the menu interface "front end" and the control program "back end" are two separate entities, i.e. they are separate computer programs. Creating reports involves two processes: the setup phase which is interactive and the execution phase which is a batch or a VAX VMS interactive process.

To create a standard report, a flat file, or a spreadsheet, users specify restrictions using the menu interface. Restrictions are necessary because the

MRP program initially defaults to all tagged releases and tag recoveries (that are valid for the particular report). User specified restrictions narrow the scope of the data request to the user's requirement, i.e. the tighter the restrictions imposed, the more specific the request and the faster the program can provide the results.

INTRODUCTION

Chapter 1 - GENERAL OVERVIEW

1.1. About this Manual

This manual will provide information about the MRP-Reporter program. The first three chapters summarizes the contents, help users starting up the program, and introduces the working environment plus some of the key concepts. The "front end" menu system is covered in depth in a tutorial style in chapters four and five. The "back end" report creation system is discussed in an expository style in chapters six through nine.

Throughout the manual there are "snap shots" of portions of the display screen from the MRP-Reporter program. Users may wish to simultaneously be running the MRP program while reading parts of this document to see the screens that the text is describing.

1.2. Other related documentation

This manual does not provide an in depth discussion and presentation of the MRP database. A companion document is available that fills this gap. The correct and full name of the companion technical document is:

THE MRP DATABASE: A
DATA MANAGEMENT AND ASSESSMENT
SYSTEM FOR SALMONIDS

1.3. What can be accomplished with this program?

This program is designed to answer a very wide variety of questions that could be posed to it by the MRP user community. Access is provided to all MRP database programs available for general use.

1.3.1. Flexible data restrictions

The MRP database contains many data fields. This program is designed to allow user restrictions to be imposed on any of the data fields. User restrictions narrow the scope of the data request from the database so as to only retrieve data relevant to the user's requirements.

1.3.2. Several standard report formats

Five standard report formats were designed for the MRP reporting software. These reports each have a standard format but can also be customized by the user.

1.3.3. Flat file builder

A user may extract a subset of data from the database that contains every data field. The output is stored in standard ASCII text files which can be processed by user written programs or commercial software which includes a data import capability.

1.3.4. Powerful spreadsheet maker

For users whose data selection needs do not fit any of the standard reports or the Flat File builder, the Spread Sheet Maker is available. The user has good control over the layout of the output from this program but the output is always in a tabular format.

1.3.5. Table lookups

The table lookup function allows the user to examine the value lists and ranges for each data field. First time users of this software or users that are unfamiliar with the MRP database should find this function helpful as an introduction to the scope of the database.

1.3.6. Access to several general use MRP programs

Other computer programs have been custom written to access the MRP database and organize the data in special formats. The Query/Dump programs are written to perform some interactive queries to the database. Some of these modules allow the data to be stored in text files. For special summary reports, the Special Report programs are provided. These programs will ask a few questions to narrow the scope of a request and then go to the database and collect the relevant data. These reports run interactively, therefore users must wait until the processing is complete.

Chapter 2 - GETTING STARTED

2.1. Logging on to the Host computer

The information needed to gain access to the PBS VAX computer is available from the PBS computing centre staff. This section briefly discusses the logging on process.

Once a computer terminal is turned on, or a terminal emulation program is running on a microcomputer, the user must be logged on to the VAX computer to be able to run the MRP program. First the <Break> key must be pressed, then after waiting three seconds, the user should press the <Tab> key. This "wakes up" the PACX terminal networking equipment and a user CLASS (consult the Computing staff for these) is requested to be entered. After the appropriate CLASS is entered, the VAX computer "wakes up" and asks for a USERNAME. Responding with a USERNAME causes the VAX to request a user PASSWORD. After the PASSWORD is correctly entered, the VAX operating system VMS displays the system prompt ($). At this point the command to start up the MRP Reporter program can be issued.

2.2. Running the MRP-Reporter program

There are several methods available to run this program. Typing in the command: MRP at the $ prompt will immediately bring up the MRP System Access menu. To bypass this menu and start up at a deeper level in the program a **command line parameter** must be supplied.

For a list and brief description of the System Access menu items, read chapter four. Valid **command line parameters** include any System Access menu item. The more characters supplied from a menu item name the more precise the parameter is, eliminating the chances of accidentally choosing an item with a name that begins the same as one of the other items. For the Query/Dump and Special Report programs, a number can be passed as a second parameter to begin execution of a menu item in these sub-menus.

Some examples:

```
$ MRP               ♦ no parameters
$ MRP Hat           ♦ Run "Hatchery recovery report"
$ MRP Q 2           ♦ Run option 2 from Query/Dump menu
$ MRP Special       ♦ Run "Special Report programs" menu
```

A typical session with the MRP-Reporter program is presented in table 2.1 to ease users into the report creation process quickly and smoothly. To fully benefit from the example session, users should be simultaneously executing the commands given in the example. The example session given is based on a list of reporting requirements. The user requires observed and expanded recoveries by catch region for April through September of catch years 1985 and 1986. Recoveries for releases of Coho, Chinook, and Steelhead reared in 1982 at the Nanaimo River CDP hatchery facility are required. Additionally, the user would like pertinent release information for each contributing tag code.

Table 2.1 lists the necessary commands to the MRP-Reporter program needed to satisfy this request. An explanation of some of the command notation used in table 2.1 follows:

←↑↓→	Refers to the left, up, down, and right arrow keys. These keys move the cursor to adjacent menu items.
2<Enter>s	Press the <Enter> key two times.
3<Enter>s	" " " " three times.
\	Press the backslash key.
<PF1>	Press function key number one (F1 key on a microcomputer).

Individual commands or entries are separated by a space, the spaces are not part of the entry. For the example session to work correctly, each keystroke must be issued in the exact sequence they are given. Users should issue a keystroke and watch how it effects the display screen and program state.

After step one, a message may appear indicating some news is available (see '*' in table 2.1). If this occurs, press any key to acknowledge the message; the System Access menu will then be displayed (see section 10.5 for a description of the News bulletin board).

[** Note: If a user has issued the $ Work command or $ BE 'user' command prior to beginning this example, the $ BE Home command should be issued prior to beginning the example to ensure success. **]

Table 2.1 - An example session with the MRP-Reporter program

Step	Command(s)	Comment
1.	$ MRP <Enter>	start the MRP-Reporter in the System Access menu
*	<Enter>	if the "News" message appears, this removes it
2.	<Enter>	execute the Hatchery recovery report menu item, [it is the highlighted menu item] passing control to the Report Setup menu
3.	K	execute KEYWORDS command, display keywords
a)	2<Enter>s → → S <PF1> ← ↓ S ↓ <Enter> \	choose SPECIES = Coho,Chinook,Steelhead after selection, backup to KEYWORDS menu
b)	↓ 3<Enter>s Nanaimo River 2<Enter>s \ \ \	choose HATCHERY = Nanaimo River CDP after selection, backup to KEYWORDS menu
c)	BR 2<Enter>s ↓ ↓ → S <Enter> \	choose BROOD-YEAR = 82 after selection, backup to KEYWORDS menu
d)	YEAR 2<Enter>s ↓ ← S <PF1> → ↓ S <Enter> \	choose YEAR-RECOVERY = 85,86 after selection, backup to KEYWORDS menu
e)	→ ↓ ↓ 2<Enter>s ↓ S → → ↓ ← ← <Enter> \	choose MONTH = Apr,May,Jun,Jul,Aug,Sep after selection, backup to KEYWORDS menu
f)	\	back up to Report Setup menu
4.	D S 5	execute DATA-TYPE command, select Obs-Exp type
5.	→ →	execute MISC command
a)	<Enter> ↓ <Enter>	choose TIME-VARIABLE = month
b)	C D	choose CWT-RELEASE-REPORT = Detailed
c)	\	backup to Report Setup menu
6.	T This is a title <PF1>	execute TITLE command, enter one to two lines finish the title entry
7.	F S example <Enter> \	execute FILE, SAVE, enter file name etc.
8.	← ← ← <Enter>	execute EXECUTE command
a)	↑ 2<Enter>s	choose DAY-BATCH device
b)	↑ <Enter> Example1 <Enter>	 choose FILENAME, enter name
c)	G <Enter>	choose GO, submits report job to 'device'
d)	\	backup to Report Setup menu
9.	Q Y	execute QUIT, confirm with YES

2.3. Quitting and/or aborting the program

The EXIT function in the MRP System Access menu will stop running the MRP program. If the program is in the Report Setup menu, the QUIT command will exit the program. At any place in the program, a user can type <Ctrl-C> to "cleanly" quit running MRP or type <Ctrl-Y> to "interrupt" program execution. <Ctrl-Y> should be used if the program is "lost in space" i.e. not responding to commands.

Chapter 3 - THE WORKING ENVIRONMENT

This program incorporates many features normally found in programs that run on microcomputers. These features may be foreign to some users who haven't been exposed to programs that utilize "windows", "pulldown menus", or horizontal and vertical command menus etc. This section will introduce these concepts and describe their use in the MRP-Reporter.

3.1. Menus

A computer program menu contains a list of commands that are available for a user to execute. This program makes use of three different types of menus, namely "horizontal", "vertical", and "multi" menus.

Horizontal menus have short command names positioned one after the other on a single screen display line. To execute one of the commands, the user can either move the cursor to the desired command using the arrow keys and press <Enter> or press the first character of the command. Normally a single line of "help" text is displayed immediately above the menu for each command in the menu. As the cursor is moved to an adjacent command, the help text is changed to reflect the new command context. An example:

```
FILES  REPORTS  GRAPHS  OPTIONS  QUIT
```

When command names are displayed vertically, the list is known as a vertical menu. These menus are surrounded by a "box" when displayed. The procedure to select one of the commands in the menu is identical to the method used for horizontal menus. Help text can be displayed for each command. A vertical menu is said to "pulldown" when it is a sub-menu of some previous command level. An example:

```
+-------+
|FILES  |
|REPORTS|
|GRAPHS |
|OPTIONS|
|QUIT   |
+-------+
```

A multi menu is a list of commands that are displayed in a matrix format. It will have several rows and several columns of commands. A horizontal menu is a form of a multi menu which has several columns and only one row. Conversely a vertical menu has several rows and only one column. To choose a command by name, the user must supply enough characters from the name to select a unique command. A small "window" is opened (see section 3.3 for a description of windows) to allow the user to enter the desired command name.

3.2. Backing up to a previous menu level

To back up a command or menu level, the \ (backslash) key will terminate the current level and return to the previous level.

3.3. Windows

Any portion of the display screen can be a window. For the MRP program, windows are surrounded by a solid box to make them easier to distinguish from the background screen information. When a window is created and displayed on the screen, it overwrites a portion of the current screen contents depending on the position of the window and its size. The underlying screen data is retained, when the window is removed from the display screen, the screen information that was previously there will be restored.

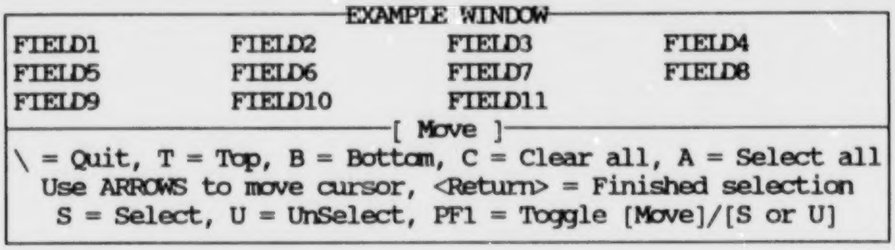
One special type of window is the "Display" window. This is a window which pops up and displays several lines of text which is sometimes a subset of the whole text block to be displayed. To display the lines currently out of view, the user has various keys available to "scroll" through the text. Some lines disappear from the top or bottom while new lines are brought into view. Scrolling is possible in the up and down direction by lines or pages (a "page" is defined to be the number of movable lines inside of the display window). See table 3.1 for a description of the commands that control this window. Display windows are used for displaying help messages, restrictions, and table lookup information etc.

The "Pick List" window is used for choosing a single item from a list of many items with several items on each line. As with the display window, there may be more information to display than will fit inside of the window, therefore some scrolling is necessary. See table 3.1 for a description of the commands that control this window.

Table 3.1 - Display window and Pick list commands

Command	Keystroke	Comment
SCROLL UP:	<Up-Arrow>	Previous line of text
SCROLL DOWN:	<Dn-Arrow>	Next line of text
PAGE UP:	<Lft-Arrow> or "P"	Previous page of text (Display only)
PAGE DOWN:	<Rgt-Arrow> or "N"	Next page of text (Display only)
NEXT ITEM:	<Rgt-Arrow>	Next item in list (Pick only)
PREVIOUS ITEM:	<Lft-Arrow>	Previous item in list (Pick only)
TOP:	"T"	Top or first line of text
BOTTOM:	"B"	Bottom or last line of text
QUIT:	"\"	Quit or abort
PICK:	<Enter>	Pick current item in list (Pick only)

A window called a "Selection List" is used to choose multiple items from a list of items with several items on each line. A box is drawn at the bottom of this window with three lines of text that list the commands that provide the user with the ability to use this window. See figure 3.1 for an example of a selection list and table 3.2 for a list of the commands to use the selection list.



```
-----------------------EXAMPLE WINDOW-----------------------
FIELD1          FIELD2          FIELD3          FIELD4
FIELD5          FIELD6          FIELD7          FIELD8
FIELD9          FIELD10         FIELD11
--------------------------[ Move ]--------------------------
\ = Quit, T = Top, B = Bottom, C = Clear all, A = Select all
  Use ARROWS to move cursor, <Return> = Finished selection
   S = Select, U = UnSelect, PF1 = Toggle [Move]/[S or U]
```

Figure 3.1 - A "Selection List" window example

Table 3.2 - Selection list commands

Command	Keystroke	Comment
SELECT:	"S"	Turn selecting on (select current item)
UNSELECT:	"U"	Turn unselecting on (unselect current item)
TOGGLE MOVE:	<PF1>	Turn move on or (un)selection mode on
SELECT ALL:	"A"	Select all items in the list
CLEAR ALL:	"C"	Unselect all currently selected items
ACCEPT SELECTION:	<Enter>	Accept all currently selected items
QUIT or ABORT:	"\"	Discard any selections and quit selecting

3.4. Getting HELP

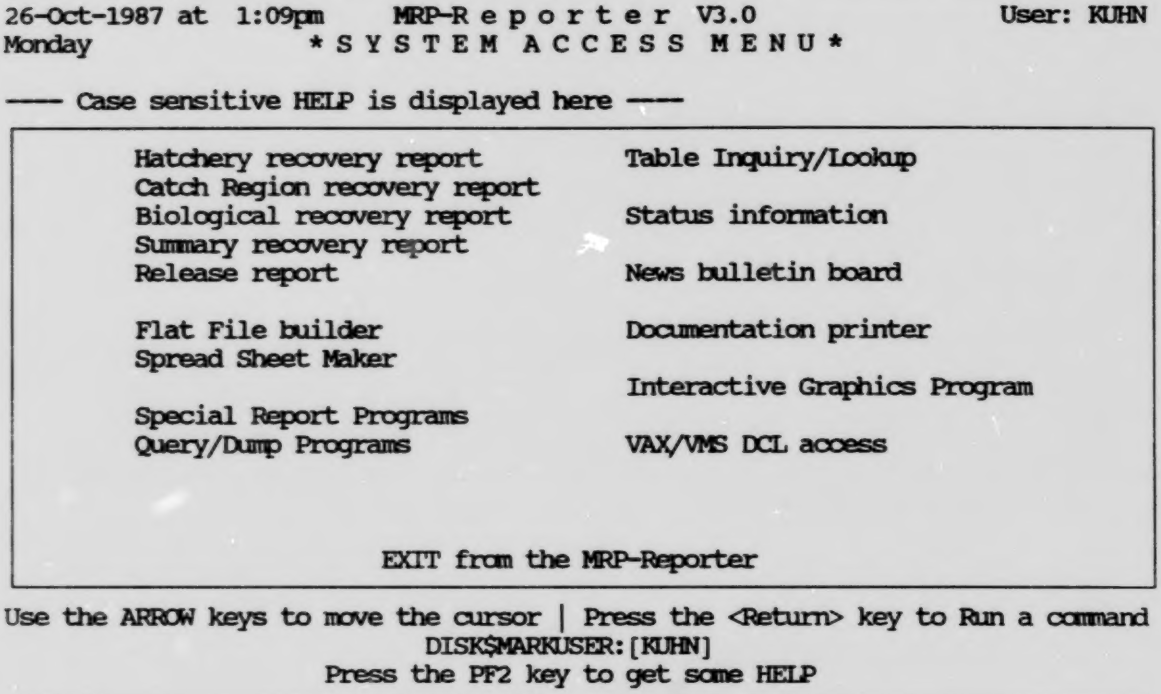
Help is available at any place in the program. Pressing the <PF2> key will "pop up" a help window. The information given in a help window is context sensitive.

3.5. REFRESHING the screen

When one user sends another user mail while running the MRP-Reporter, the notification message will overwrite the current screen contents. The program doesn't know that a mail message was received, so it can't automatically restore the screen contents. Pressing the <PF4> key will execute a screen REFRESH function which rewrites the entire screen with what the program knows should be displayed. This function can be used to clear any unexpected message from the screen such as system messages, batch job completion messages etc.

3.6. Getting STATUS information

To display a list of restricted keywords when the program is in the Report Setup menu, users can press the <PF3> key. This information is available at any menu level in the setup menu.



```
26-Oct-1987 at  1:09pm     MRP-R e p o r t e r  V3.0                User: KUHN
Monday                *S Y S T E M  A C C E S S  M E N U*

---- Case sensitive HELP is displayed here ----
+--------------------------------------------------------------------------+
|        Hatchery recovery report          Table Inquiry/Lookup            |
|        Catch Region recovery report                                      |
|        Biological recovery report        Status information              |
|        Summary recovery report                                           |
|        Release report                    News bulletin board             |
|                                                                          |
|        Flat File builder                 Documentation printer           |
|        Spread Sheet Maker                                                |
|                                          Interactive Graphics Program    |
|        Special Report Programs                                           |
|        Query/Dump Programs               VAX/VMS DCL access              |
|                                                                          |
|                                                                          |
|                                                                          |
|                        EXIT from the MRP-Reporter                        |
+--------------------------------------------------------------------------+
Use the ARROW keys to move the cursor | Press the <Return> key to Run a command
                          DISK$MARKUSER:[KUHN]
                     Press the PF2 key to get some HELP
```

Figure 4.1 - The "System Access menu"

This menu is the first menu displayed after typing MRP <Enter> at the VMS dollar sign ($) prompt. All major components of the MRP-Reporter program are accessible from this menu. This menu is an example of a "multi menu".

4.1. Screen content description

On the first line, the date, time, and the USERNAME is displayed. As the cursor is moved to different command names, the fourth line is updated to display a help message which is meaningful for the command at the cursor. The twenty-third line shows the current disk and directory path where files will be saved to and retrieved from. Inside the menu are sixteen command names. There are five standard report formats, the Flat File builder, the Spread Sheet Maker, and several other miscellaneous functions.

4.2. Choosing a menu item

Move the cursor to the command to execute and press the <Enter> key. Alternatively, type several characters from the desired command name and press <Enter>.

4.3. Brief description of each menu item

This section provides a brief overview for each menu item. It assumes some knowledge about MRP data types such as observed, estimated, and expanded recoveries and some knowledge about MRP data fields.

4.3.1. Hatchery recovery report

This function can report the recovery data associated with each release that is selected from the tagging data based on restrictions imposed by the user. The recovery data can be reported in combinations of observed, and/or estimated, and/or expanded recoveries for various catch regions for various recovery years. The data can alternatively be summarized as a total for each recovery year. The data can be reported for various time slots. This report can answer questions such as:

> Where were 1982 Big Qualicum coho releases recovered in catch years 1983 through 1986?

4.3.2. Catch Region recovery report

This report can report the hatchery, release, or stock site names and species name with the observed and/or estimated and/or expanded recovery numbers for recovery years or a total for each site/species combination. It can also report the data in user selectable time slots. Use this report to answer questions like the following:

> What hatcheries contributed to recoveries in the Georgia Strait troll and net fisheries for 1986?

4.3.3. Biological recovery report

There are two significant differences between this report and the hatchery recovery report: this report can report up to ten different data types with biological emphasis, and it does not report sport or escapement recovery data whereas the hatchery report does. The sport and escapement data are rejected because length and weight data are currently not recorded for these gear types and this report prints length and weight data.

4.3.4. Summary recovery report

If a more summarized and rigid format is desired, this report can satisfy these requirements. There are no data type choices or time variable choices available. There are eleven fixed data types printed for each summarized catch area (not to be confused with catch region). This report will give recovery information for each selected release as will the hatchery report; the main difference is a much more summarized report format.

4.3.5. Release report

This report lists only release (not recovery) information. It is available in four different formats including a header report with detail or just totals and a dump report with detail or just totals. The dump report prints every release field in the database.

4.3.6. Flat File builder

Standard ASCII text files are created containing complete release and recovery records as well as any associated tables. Files from this program could be used as input to commercially available statistical analysis programs or user written programs. A rollup recovery file is also available with the release and recovery files summarized on a time-area stratum.

4.3.7. Spread Sheet Maker

When a data request doesn't warrant a structured report format, or can't be satisfied with one of the standard reports, or the output wanted is just a table of numbers; the Spread Sheet Maker should be chosen. The output from this report can be as detailed or summarized as needed but will always be in a tabular format with rows and columns of data.

4.3.8. Special Report Programs

Some of these programs will access preliminary American recovery data and possibly other data not currently in the MRP online database. After MRP runs a program from this sub-menu and the program finishes executing, system control is returned to this sub-menu.

4.3.9. Query/Dump Programs

To look at "raw" data in the database, there are available for access, several different custom programs. As with the Special Report programs, after a selected program has terminated, system control is returned to this sub-menu.

4.3.10. Table Inquiry/Lookup

The Table Lookup function provides access to all the available tables used in the database. Many of the data fields that use special codes for storage need tables with the name associated with each code. This function allows browsing through the various tables to become familiar with the scope of the database.

4.3.11. Status information

Every year a new set of data is added to the database. There is a facility provided for querying the MRP-Reporter program for a list of the completed data sets to date. Additionally, access to a second status program is available which presents a detailed description of what data are available from the database for each year.

4.3.12. News bulletin board

This function is provided so that the developers of the MRP database and this program can communicate special news/messages to the users of programs accessible from the MRP-Reporter program. Enhancements, changes, problems, programming fixes, etc. are reported via the News bulletin board.

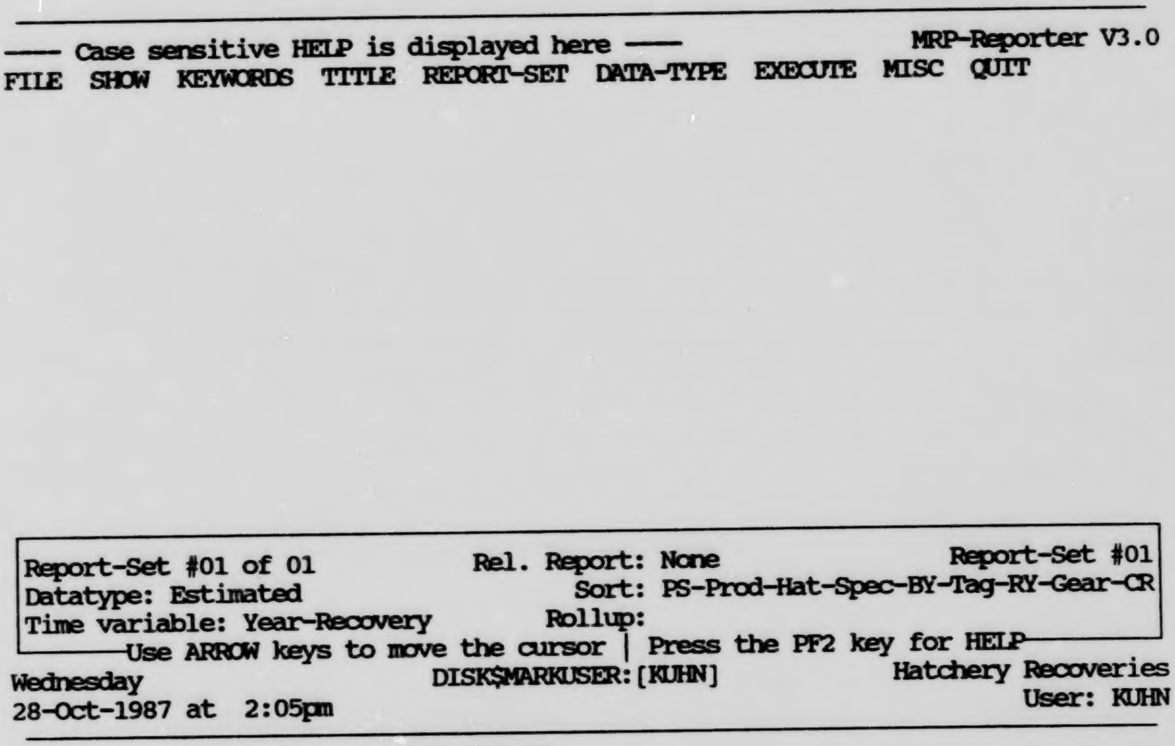
4.3.13. Other menu items

The "Documentation printer" and "VAX/VMS DCL access" menu items are currently not available, they may be developed in the future.

The "Interactive Graphics Program" is a custom written graphics program available on the VAX computer which is capable of "importing" spreadsheet tables created by the Spread Sheet Maker program. This graphics program can produce a variety of different graph types on any of the VAX supported graphics display or hard copy devices. This function will run the graphics program and when it has completed execution, system control will return to the MRP-Reporter program in the System Access menu.

Chapter 5 - REPORT SETUP MENU

When a standard report, the Flat File builder, or the Spread Sheet Maker is chosen from the System Access menu, program control is passed on to the Report Setup menu. The general menu is shown in the figure below.



```
---- Case sensitive HELP is displayed here ----              MRP-Reporter V3.0
FILE  SHOW  KEYWORDS  TITLE  REPORT-SET  DATA-TYPE  EXECUTE  MISC  QUIT

















Report-Set #01 of 01          Rel. Report: None                Report-Set #01
Datatype: Estimated                  Sort: PS-Prod-Hat-Spec-BY-Tag-RY-Gear-CR
Time variable: Year-Recovery        Rollup:
------Use ARROW keys to move the cursor | Press the PF2 key for HELP---------
Wednesday                   DISK$MARKUSER:[KUHN]           Hatchery Recoveries
28-Oct-1987 at  2:05pm                                              User: KUHN
```

Figure 5.1 - The "Report Setup menu"

Each of the five standard report formats, the Flat File builder, and the Spread Sheet Maker are set up using this menu which allows restrictions to be imposed on individual data fields, selecting sort orders, rollup levels, etc. There are some differences in the setup menu between report formats, figure 5.1 demonstrates the menu for the Hatchery recovery report.

5.1. General screen content description

Displayed on the top line is a help message dependent on the position of the cursor. As the cursor is moved to a different command, the corresponding help message is displayed for the command. The second line is a horizontal command menu containing all of the top level commands for the menu. The "white" space between the second and eighteenth lines will be filled with all of the keyword (data field) names when the KEYWORDS command is executed. Lines nineteen to twenty-one enclosed by the box are called the "status box".

The information inside the status box displays some of the current miscellaneous report settings (listed and described in section 5.2). The last two lines display the date, time, VAX disk directory file path, report format name, the VAX username, and the current set of command levels. Command levels reflect the sequential list of commands executed to reach a particular level in the menu. For example, if the FILE command is chosen and then the LIST command from the FILE sub-menu, the text "FILE LIST" will appear near the middle of the last line of the screen.

5.2. General status box content description

The contents displayed inside the status box vary depending on which report format the user is configuring. Each report format has different settings displayed in this area except for two things: the text "Report-Set #01 of 01" (or "Column #01 of 01" for the Spread Sheet Maker) which says the current Report-Set (Column) is number one of a total of one available report sets (see section 5.3.6 for a description of Report-Set) (Columns) and the Report-Set (Column) label for describing the contents of a Report-Set (Column). Report sets are described in detail in section 5.3.6. The other items shown in the status box vary between report formats and are described later in section 5.3.10 (MISC MENU).

5.3. The menu commands

This section describes all the commands that can be executed from the Report Setup menu.

5.3.1. FILE

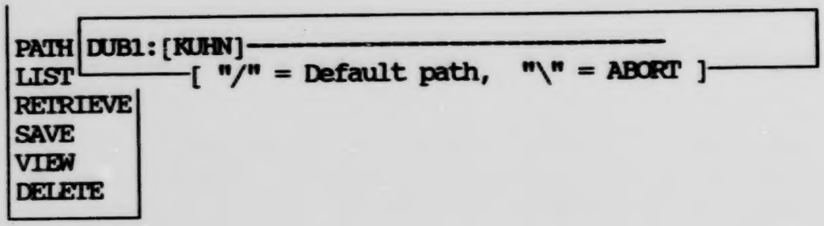
The FILE command provides commands for changing directories, viewing file listings, saving and retrieving Save-Set files (see section 5.3.1.4), viewing a Save-Set file, or deleting files as shown in the sub-menu below.

```
PATH
LIST
RETRIEVE
SAVE
VIEW
DELETE
```

5.3.1.1. PATH

The PATH command allows users to change the current disk drive and file directory used for saving and retrieving files to and from. This command can be used to allow a Save-Set file to be retrieved from a directory different from the current one i.e. from another user's directory. After a file is retrieved, the path should be reset to the original setting so that files may be created in the original directory.

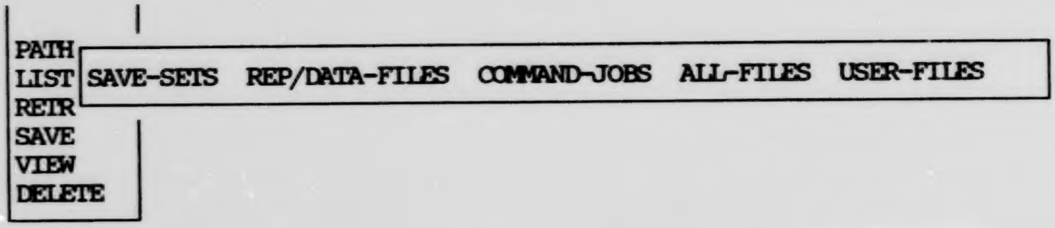
To change the path, choose the PATH command from the FILE sub-menu. A window is opened:



The cursor is positioned after the ']' character. There are several editing keys (see appendix B) that allow the path to be modified. Pressing <Enter> accepts the path. If PATH is accidentally executed, pressing the '\' (backslash) key will abort the PATH command. To restore the path to the initial path used when the program was executed, enter the '/' (slash) key.

5.3.1.2. LIST

To show a directory listing of files with extensions used by the MRP-Reporter program, choose the LIST command. When LIST is executed, a horizontal menu is displayed:



providing five different options for receiving a directory listing.

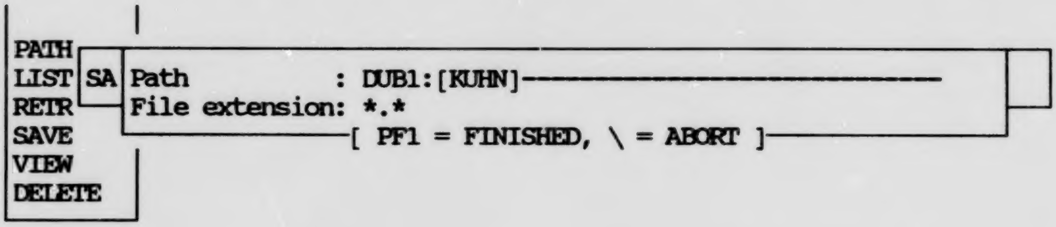
Table 5.1 - File extensions used by the program

MRP	: MRP-Reporter Save-Set file
COM	: VAX/VMS command job file. Used by MRP to store commands for generating reports.
LIS	: Created during a report run to store a description of the run. Contains a list of the restrictions/settings, warnings, forced restrictions, and miscellaneous information for the user.
REL	: Stores a release report from a standard report run or the release data from a Flat File builder run.
REC	: Stores a recovery report from a standard report run or the recovery data from a Flat File builder run.
ROL	: Stores the rollup recovery data from a Flat File builder run.
DAT	: Stores the spreadsheet output from a Spread Sheet Maker run.
LOG	: Records error and warning messages that occurred during a report run. At the end of this file some run statistics are recorded if the report is run in a VAX/VMS batch queue.

A file extension is the portion of a file name that appears after the "." (period) in the name.

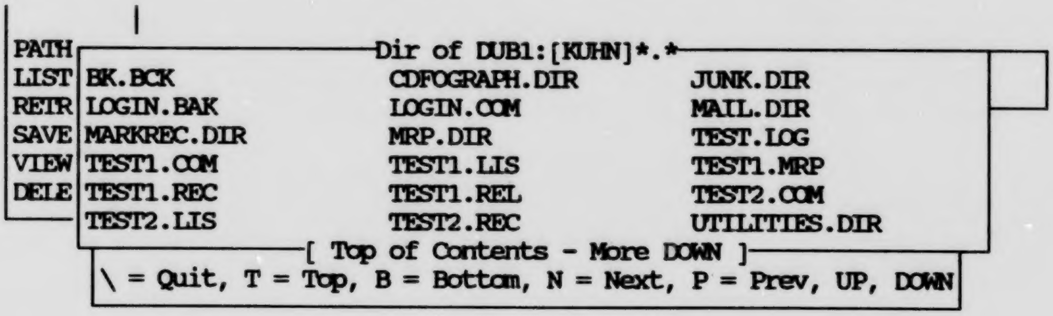
The SAVE-SETS command will list all files with the extension ".MRP". Use REP/DATA-FILES to show all files with the extensions ".LIS", ".REL", ".REC", ".ROL", and ".DAT" which are reserved for storing the output from a report run (see table above). To list all files ending with the extension ".COM", use the COMMAND-JOBS command.

For a complete listing of all files in the current directory, use the ALL-FILES command. The USER-FILES command lists files with an extension that the user enters. When the USER-FILES command is chosen, a window opens with a prompt for the directory path to list and the file extension to search for.



```
Path          : DUB1:[KUHN]
File extension: *.*
[ PF1 = FINISHED, \ = ABORT ]
```

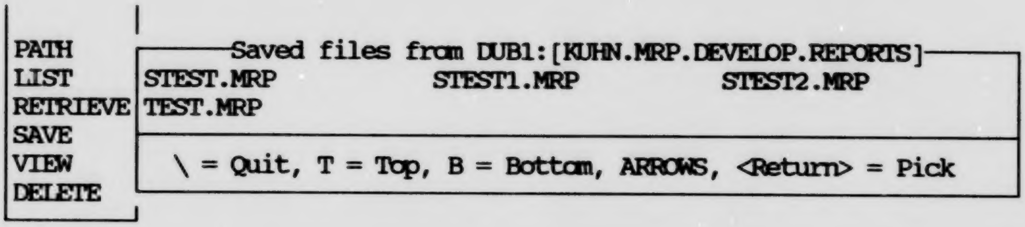
To show the list of files selected from the directory, a display window pops up. If the file list is longer than the space in the display window, the files not in view can be scrolled into the window. For example:



```
|          |
PATH ┌───────────────────────Dir of DUB1:[KUHN]*.*──────────────────┐
LIST │BK.BCK               CDFOGRAPH.DIR          JUNK.DIR          │
RETR │LOGIN.BAK            LOGIN.COM              MAIL.DIR          │
SAVE │MARKREC.DIR          MRP.DIR                TEST.LOG          │
VIEW │TEST1.COM            TEST1.LIS              TEST1.MRP         │
DELE │TEST1.REC            TEST1.REL              TEST2.COM         │
└────│TEST2.LIS            TEST2.REC              UTILITIES.DIR     │
     └──────────────[ Top of Contents - More DOWN ]───────────────┘
      │ \ = Quit, T = Top, B = Bottom, N = Next, P = Prev, UP, DOWN│
```

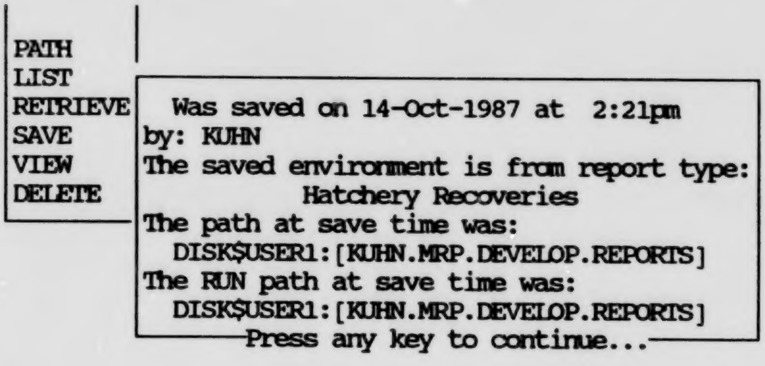
5.3.1.3. RETRIEVE

To load in a Save-Set file (file.MRP), select the RETRIEVE command to open a pick list window, listing all of the ".MRP" files in the current directory.



```
|          |
PATH      ┌──────Saved files from DUB1:[KUHN.MRP.DEVELOP.REPORTS]──────┐
LIST      │STEST.MRP             STEST1.MRP             STEST2.MRP     │
RETRIEVE  │TEST.MRP                                                    │
SAVE      ├────────────────────────────────────────────────────────────┤
VIEW      │  \ = Quit, T = Top, B = Bottom, ARROWS, <Return> = Pick    │
DELETE    └────────────────────────────────────────────────────────────┘
└──────────┘
```

Move the cursor using the arrow keys or the "T" or "B" key to the file name to retrieve and press the <Enter> key. The program will close the pick list window, load the file, and open a display window showing some information about the file that was loaded. For example:



```
|          |
PATH       |
LIST      ┌──────────────────────────────────────────┐
RETRIEVE  │  Was saved on 14-Oct-1987 at  2:21pm     │
SAVE      │by: KUHN                                  │
VIEW      │The saved environment is from report type:│
DELETE    │          Hatchery Recoveries             │
└─────────│The path at save time was:                │
          │  DISK$USER1:[KUHN.MRP.DEVELOP.REPORTS]   │
          │The RUN path at save time was:            │
          │  DISK$USER1:[KUHN.MRP.DEVELOP.REPORTS]   │
          └───────Press any key to continue...───────┘
```

This window shows several pieces of information about the loaded file. The RUN path at save time is the initial directory path, whereas the path at save time is the directory path that was current when the file was saved.

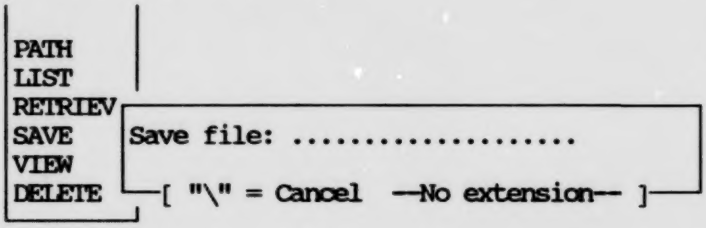
Retrieving a file clears all restrictions or settings that were made before retrieving. The contents of the loaded file will create restrictions and change settings automatically as directed by the retrieved file. The status box will be updated to reflect the new Save-Set information.

A file saved in one report format environment may be retrieved into a different format by first saving the file then changing to the other format and retrieving the file. Only the settings and restrictions that are relevant to both environments are retrieved. This feature allows a user to create a report with the "Hatchery recovery report" format, save the settings, change to the "Spread Sheet Maker" format, retrieve the file, and create a spreadsheet with minimal editing of the settings.

5.3.1.4. SAVE

Saving a Save-Set file will retain all restrictions and settings that can be selected and changed by the user. Basically a "snap shot" of the current MRP-Reporter environment information is saved in a file with the ".MRP" extension in the current file directory path.

When the SAVE command is chosen, a window pops up:



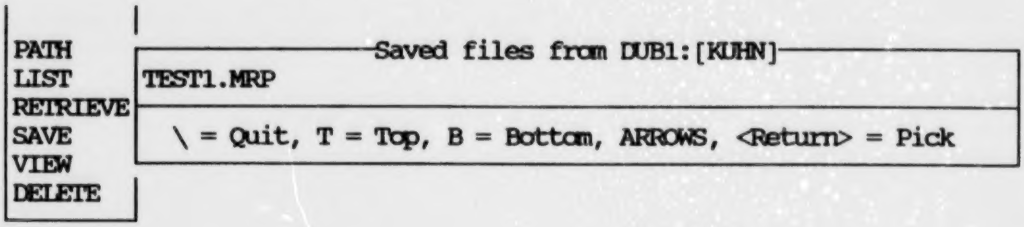
```
PATH
LIST
RETRIEV
SAVE     Save file: ...................
VIEW
DELETE   [ "\" = Cancel  --No extension-- ]
```

prompting for a filename (excluding the file extension). If an existing filename is entered, the user will be informed of this matter and asked to confirm the save which would overwrite the contents of the existing file.

5.3.1.5. VIEW

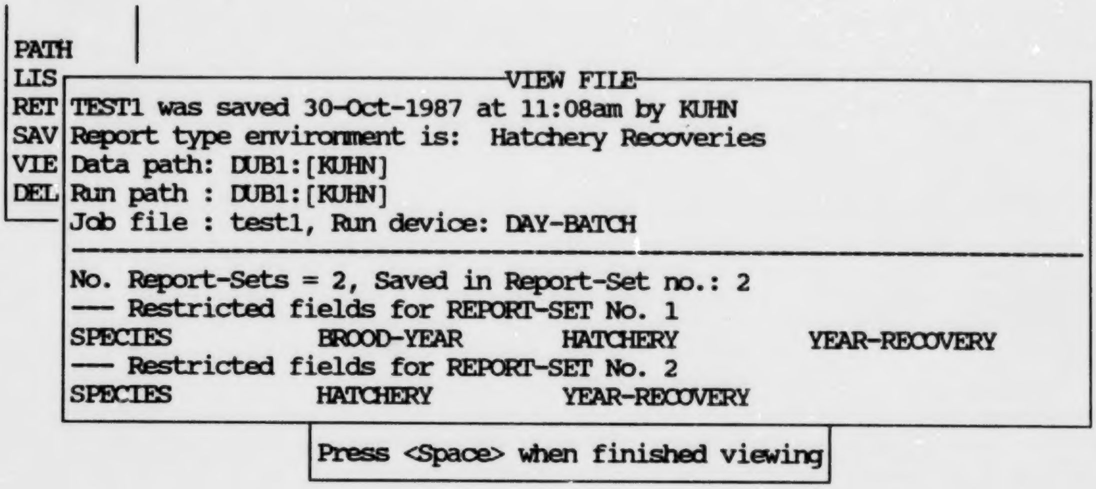
To scan the contents of a Save-Set file without retrieving it, the VIEW command will produce a summarized display which lists the restrictions that were made etc.

When the VIEW command is executed a window pops up:



```
Saved files from DUB1:[KUHN]
TEST1.MRP
\ = Quit, T = Top, B = Bottom, ARROWS, <Return> = Pick
```

displaying a list of Save-Set files, in a pick list, that are available for viewing. After choosing the file, the program opens a display window to show the results from the VIEW command:



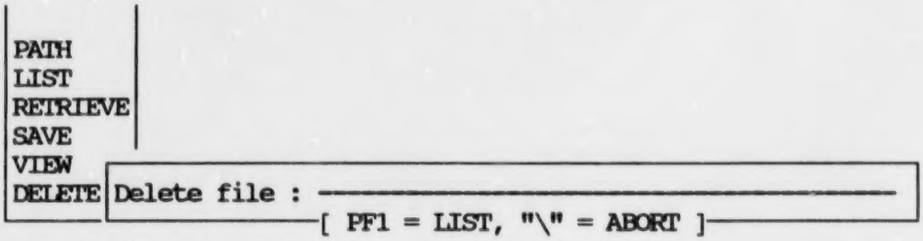
```
                              VIEW FILE
TEST1 was saved 30-Oct-1987 at 11:08am by KUHN
Report type environment is:  Hatchery Recoveries
Data path: DUB1:[KUHN]
Run path : DUB1:[KUHN]
Job file : test1, Run device: DAY-BATCH
---------------------------------------------------------------------
No. Report-Sets = 2, Saved in Report-Set no.: 2
--- Restricted fields for REPORT-SET No. 1
SPECIES          BROOD-YEAR       HATCHERY         YEAR-RECOVERY
--- Restricted fields for REPORT-SET No. 2
SPECIES          HATCHERY         YEAR-RECOVERY

                 Press <Space> when finished viewing
```

Beneath the dashed line, information about restricted fields, in each Report-Set, is displayed. The first line below the dashed line shows that the Save-Set file contains two Report-Sets and was saved while Report-Set number 2 was active. The above "snap shot" shows the field names that are restricted in all of the Report-Sets that were created (see section 5.3.6 for more information on multiple Report-Sets).

If there is a longer list of information to display that can not completely fit inside of the viewing window, scrolling is provided as the VIEW command uses a display window.

5.3.1.6. DELETE

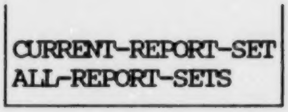
To remove a file from the disk file directory, select the DELETE command. When a file is deleted, it is permanently removed. When the DELETE command is executed it opens a window:



```
PATH
LIST
RETRIEVE
SAVE
VIEW
DELETE Delete file : ________________________________________
                    [ PF1 = LIST, "\" = ABORT ]
```

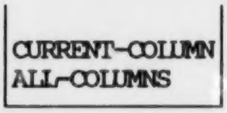
prompting for the name of the file to delete; by pressing the <PF1> or <Enter> key, a pick list window will open displaying a list of the files from the current directory path from which a file can be selected for deletion. When a file is chosen to be deleted, the program asks confirmation of this action.

5.3.2. SHOW



```
CURRENT-REPORT-SET
ALL-REPORT-SETS
```

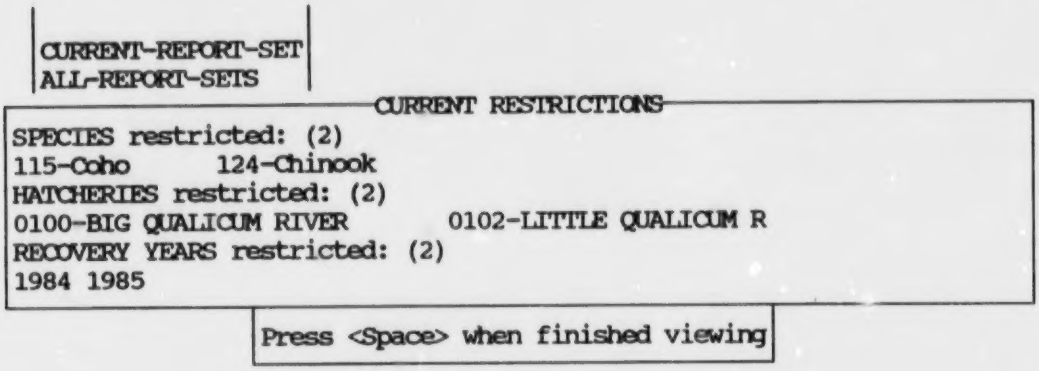
or



```
CURRENT-COLUMN
ALL-COLUMNS
```

There are two possible SHOW sub-menus, depending on whether the Spread Sheet Maker or a report format is being configured. For the report formats, different Report-Sets are created, whereas with the Spread Sheet Maker, columns are defined.

To display a list of the currently restricted fields with their restricted values in the current Report-Set, use the CURRENT-REPORT-SET command (or for the current column use CURRENT-COLUMN) from the SHOW sub-menu to pop up a display window:



```
CURRENT-REPORT-SET
ALL-REPORT-SETS
                         CURRENT RESTRICTIONS
SPECIES restricted: (2)
115-Coho      124-Chinook
HATCHERIES restricted: (2)
0100-BIG QUALICUM RIVER       0102-LITTLE QUALICUM R
RECOVERY YEARS restricted: (2)
1984 1985

                 Press <Space> when finished viewing
```

If more than one Report-Set is created, the ALL-REPORT-SETS command (or column, ALL-COLUMNS) will show restriction and settings information for all of the created Report-Sets (Columns). This information is shown in a display window as with the CURRENT-REPORT-SET (CURRENT-COLUMN) command.

5.3.3. KEYWORDS

To apply restrictions to individual database fields, choose the KEYWORDS command. This will display all the keywords (field names) on the screen divided into three different groupings or categories. These categories are release, recovery, and catch/sample keywords (field names) shown in the figure below.

```
Release keywords:SPECIES          TAGCODE          EXPERIMENT-ID   BROOD-YEAR
  DATE-RELEASED  HATCHERY         SITE-RELEASED    STOCK-SITE      PROD-AREA
  REL-PROV/STATE AGENCY           STUDY-TYPE       REARING-TYPE    CO-ORDINATOR
  REL-RUN-TYPE   STAGE            SIZE             DAYS-HELD       REPLICATES
  METHOD         NUM-TAGGED       ADIPOSE-ONLY     UNCLIPPED       TOTAL-RELEASED
  %TAG-LOSS      EXP-SURVIVAL     PROGRAM-TYPE     TYPE-STOCK
Recovery keywords:
  YEAR-RECOVERY  REGION-CATCH     GEAR             REC-PROV/STATE  SUB-AREA
  SPORT-LOCATION STAT-AREA        ESCAPE-SITE      RECOVERY-TYPE   REC-RUN-TYPE
  SAMPLE-AGE     MONTH            AGE-CLASS        WEEK            GRADE
  COLOR          SEX-MATURITY     LENGTH           WEIGHT          LOC-SAMPLE
  DELIVERY       SCALE-AGE
Catch/Sample keywords:
  CATCH          SAMPLE           RATIO            AWARE-SPORT
```

Figure 5.2 - The "Keywords menu"

5.3.3.1. Using the KEYWORDS menu

Several commands are provided for navigating this menu and for choosing keywords to work with. A list and description of these commands is shown in table 5.2.

Table 5.2 - "Keywords menu" command list

Command	Keystroke	Comment
MOVE CURSOR:	<Up-Arrow>	Up one or to bottom if in first word
	<Dn-Arrow>	Down one or to top if in last word
	<Rgt-Arrow>	Right one or to far left if in far right
	<Lft-Arrow>	Left one or to far right if in far left
CHOOSE:	<Enter>	Choose current keyword
	keyword name	Enter portion of keyword name
QUIT:	"\\"	Quit to the top menu

5.3.3.2. Release keywords

Applying restrictions on release fields will reduce the number of tag codes the program will need to retrieve recovery data for. All release fields are available for restriction to allow users to restrict on several different release fields simultaneously. For example, to request all Chinook recoveries for brood year 1982 from the Big Qualicum hatchery the following release keywords would need restriction: SPECIES, BROOD-YEAR, and HATCHERY.

5.3.3.3. Recovery keywords

As with the release keywords, every recovery field available in the database is capable of being restricted. Whenever possible, apply recovery restrictions. This will reduce the amount of computing power needed by the report creation programs to generate the requested report. For example, using the example in section 5.3.3.2 above, if the user only wants recoveries for the Georgia Strait Sport fishery, the REGION-CATCH keyword could be restricted accordingly. Furthermore, if only 1986 recoveries are required, restricting the YEAR-RECOVERY keyword will cause the program to ignore all other years.

5.3.3.4. Catch/Sample keywords

These keywords are used for specialized kinds of data requests. Not all catch region/time intervals have sampling activity, which means the database is not complete. To provide estimated recoveries with bad catch or sample data, the program uses a user specified value for the catch/sample ratio. This user value can be changed via the RATIO and AWARE-SPORT keywords. (Bad catch or sample data includes zero catch or sample, catch/sample ratios less than one etc.)

5.3.4. TITLE

A title is an optional feature for the reports. If it is entered, it will appear on the top of every page in the release and recovery reports. Titles do not appear in the output from the Flat File builder or the Spread Sheet Maker. However if a title is entered for these two report types, it will appear in the command job file.

When the title command is executed, a window pops up allowing two 50 character lines to be entered for a title:

```
┌─────────────T I T L E   E N T R Y───────────┐
│This is the first line of the title,         │
│and this is the second line..................│
├─────────────────────────────────────────────┤
│          [ "\" = ABORT,  PF1 = DONE ]       │
└─────────────────────────────────────────────┘
```

String editing is available (see Appendix B) to facilitate easy entry and editing of the title lines. Pressing <Up-Arrow> moves to the previous line and <Dn-Arrow> or <Enter> moves to the next line. Pressing the <PF1> function key will inform the program that the title is complete.

5.3.5. ROW (Spread Sheet Maker)

The MRP Spread Sheet Maker allows setup of individual columns and the row detail levels. A row variable is chosen from the data field names that are displayed by the KEYWORD command. This feature determines the level of detail that the spreadsheet will contain as well as the sort order. Up to three levels can be selected simultaneously for the row variable.

5.3.5.1. 1st, 2nd, and 3rd LEVELS

Specifying row variable levels defines the level of detail that the spreadsheet will contain. For example, if TAGCODE is selected as the first and only level, the spreadsheet will provide data in each column by tag code and each different tag code found will be printed in the first column of the spreadsheet.

```
|         |
|1st-LEVEL|
|2nd-LEVEL|
|3rd-LEVEL|
|SORT     |
|_________|
```

From this sub-menu, up to three different levels can be selected; additionally, how the spreadsheet should be sorted, can be specified. When one of the level commands is executed, a further sub-menu appears allowing selection of a keyword (data field) for that level or to clear that level from the row variable:

```
|         |
|1st-LEVEL|
||------|L|
||SELECT|L|
||CLEAR | |
||______|_|
```

Choosing to SELECT a keyword (data field), causes the KEYWORDS menu to be displayed (unless it is already on the screen). From this menu choose a keyword name for the row variable level by moving the cursor to the desired keyword and pressing the <Enter> key.

5.3.5.2. SORT

To change the SORT option, choose the SORT command to pull down a sub-menu listing the options:

1st-LEVEL
2nd-LEVEL
3rd-LEVEL
SORT
Ascending
Descending
None

If ASCENDING or DESCENDING is chosen, the row variable is sorted accordingly based on the row data selected during the Spread Sheet Maker run. If NONE is selected, the rows will appear in the spreadsheet as they are retrieved from the database.

5.3.6. REPORT-SET

CHANGE-TO
MOVE-FROM/TO
INSERT
DELETE
LABEL

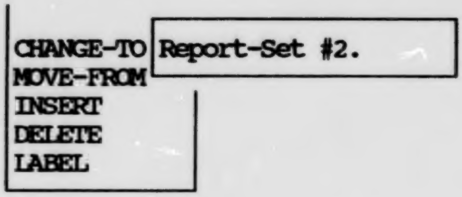
When a report is being configured, the resulting set of restrictions and settings are called a "Report-Set". The program allows up to twenty independent Report-Sets to be defined, with each Report-Set having a number assigned to it so it can be distinguished from the others. Normally users want to extract MRP data using several reports that are nearly identical, each with a slightly different configuration. With the commands available in this sub-menu, a Report-Set can easily be created from one that is already set up and then, after changing to a new Report-Set and making the desired changes, a new report configuration is born. When a Report-Set is executed (see section 5.3.9.1), only the currently active Report-Set is executed, not all Report-Sets. When this group of Report-Sets is saved using the FILE SAVE command, it is saved in a "Save-Set file".

5.3.6.1. CHANGE-TO

To switch between Report-Sets, use the CHANGE-TO command to specify a Report-Set number. If the Report-Set number entered is greater than the number of Report-Sets created thus far, the program will create a new

Report-Set with a number equal to one more than the total number of Report-Sets created thus far.

Choosing this command will pop open a window:

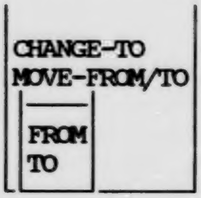


Report-Set #2.

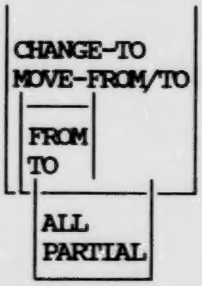
to allow the Report-Set number to be entered. The program offers a number equal to the current number plus one. After pressing <Enter>, the program will switch to the new Report-Set and update the status box with the current Report-Set settings information. This operation can be aborted by pressing the "\" (backslash) key.

5.3.6.2. MOVE-FROM/TO

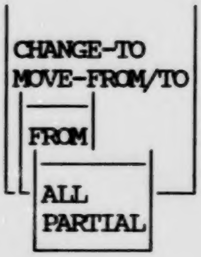
To facilitate movement of all or parts of a Report-Set to other Report-Sets in the Save-Set, the MOVE-FROM/TO command is available. Several steps are required to execute this command. Several pull down menus appear as sub-options are chosen from each sub-menu. The first sub-menu asks if the Report-Set is to be moved TO other Report-Sets or FROM an existing Report-Set to the current Report-Set:



Choose TO or FROM:



or



After deciding to move FROM or TO, another pulldown menu appears offering a choice between moving ALL settings and restrictions or choosing some of the settings and restrictions (PARTIAL). If ALL of the Report-Set is to be moved, the program prompts for the Report-Set number(s) to move TO or the Report-Set number to move FROM:

```
|             |
|CHANGE-TO    |
|MOVE-FROM/TO |                 (FROM)
||────|       |
||FROM|       |
|||─────────| |
└└|ALL      |─┘
  |┌──────────────────────────┐
  └|Report-Set # ..           |         ♦ Enter a Report-Set no.
   |                          |
   └──────[ "\" = Cancel ]────┘
```

or

```
|             |
|CHANGE-TO    |
|MOVE-FROM/TO |                 (TO)
||────|       |
||FROM|       |
||TO  |       |
└└|─────────|─┘
  |ALL      |
  |┌────────────────────────────────────────────┐
  └|Report-Set no(s):....................         |
   |                                            |
   └──────────────[ "\" = Cancel ]──────────────┘
```

To enter a list or range of Report-Set numbers, enter each number separated by commas and/or a range using a colon. For example:

```
2,4:6
```

would move TO Report-Set numbers 2, 4, 5, and 6. If Report-Set numbers are specified larger than the number of Report-Sets created this far, the program prompts for confirmation of creating new Report-Sets:

```
┌────────────────────────────────────────────┐
|Report-Set # 02 is > no. existing.          |
|Create new Report-Set(s) (Y or N) ? Y       |
└────────────────DATA MOVER──────────────────┘
```

If only some of the restrictions/settings (PARTIAL) are to be moved, then a selection list window will pop up allowing selection of the Report-Set items to be moved:

```
┌──────────────────────────────FIELD SELECT─────────────────────────────┐
│DATA-TYPE       TIME-VARIABLE  ROLLUP         SORT                    │
│CWT-REL-REPORT  NON-TAGS       PAGE-BREAK     USE-TOTALS              │
│GET-INCOMPLETE  LABEL          TITLE                                  │
├─────────────────────────────────[ Move ]──────────────────────────────┤
│\ = Quit, T = Top, B = Bottom, C = Clear all, A = Select all          │
│  Use ARROWS to move cursor, <Return> = Finished selection            │
│   S = Select, U = UnSelect, PF1 = Toggle [Move]/[S or U]            │
└───────────────────────────────────────────────────────────────────────┘
```

The selection window displays all of the settings field names. For restriction fields, only ones with restrictions imposed will be displayed.

5.3.6.3. INSERT

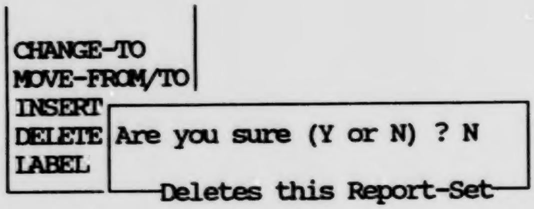
The result executing this command, is a new Report-Set or Column that is "inserted" in front of the current Report-Set/Column. All other Report-Sets/Columns are "bumped" to the right by one Report-Set/Column position. A window pops up asking for confirmation of this event:

```
│             │
│CHANGE-TO    │
│MOVE-F┌────────────────────────────┐
│INSERT│Are you sure (Y or N) ? N   │
│DELETE│                            │
│LABEL └──Insert New Report-Set─────┘
└─────────────┘
```

After the insertion is complete, the current Report-Set/Column is the new inserted Report-Set/Column.

5.3.6.4. DELETE

To remove a Report-Set or Column from the current setup, use the DELETE command. All Report-Sets/Columns that exist to the right of the one deleted, are "pulled" left by one Report-Set/Column, the deleted Report-Set/Column is "squeezed" out. When DELETE is executed a window pops up requesting confirmation of this operation:

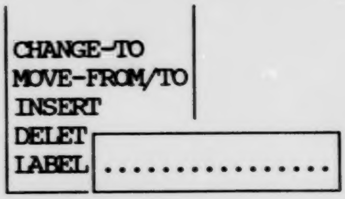


```
CHANGE-TO
MOVE-FROM/TO
INSERT
DELETE  Are you sure (Y or N) ? N
LABEL
          Deletes this Report-Set
```

This operation deletes the currently active Report-Set/Column, therefore first CHANGE-TO the Report-Set/Column to be deleted.

5.3.6.5. LABEL

Labels are only used for documentation purposes for the standard report types and the Flat File builder, i.e. a note that identifies the Report-Set. The Spread Sheet Maker program uses column labels as actual column headers in the spreadsheet output file. Executing the LABEL command opens a window displaying the current label text (blank if first time) to enter/change:



```
CHANGE-TO
MOVE-FROM/TO
INSERT
DELET
LABEL ................
```

Several editing keys make the editing process quick and flexible (see Appendix B).

5.3.7. COLUMN (Spread Sheet Maker)

The COLUMN command is almost identical to the REPORT-SET command described in section 5.3.6, except COLUMN applies to the Spread Sheet Maker program. The same sub-commands are applicable to the COLUMN command as to the REPORT-SET command.

The CHANGE-TO command allows setting up different columns for a spreadsheet rather than Report-Sets for report formats. Through this command global restrictions may be set up that are in effect for all columns defined, by CHANGEing TO "column" "0". The global aspect is further discussed in section 9.2.4.

5.3.8. DATA-TYPE

The DATA-TYPE command applies to the following report formats/types:

Hatchery recovery report
Catch Region recovery report
Biological recovery report
Spread Sheet Maker

Each of these reports may have a different list of valid data types. When the DATA-TYPE command is executed, a sub-menu, listing the valid data types for the report format, is pulled down allowing selection of the data type(s) for the report. The Hatchery and Catch Region reports and the Spread Sheet Maker provide an optional adjustment to commercial and sport observed recoveries for Lost pin, No pin, and No data recoveries (for a description see table 5.3a below) by first offering this sub-menu:

```
DATA-TYPE
|                   |
|SELECT-TYPE        |
|ADJUST-RECOVERIES  |
|___________________|
```

5.3.8.1. Hatchery and Catch Region recovery reports

For these report formats, combinations of observed, estimated, and expanded recovery numbers are available. These three types of recovery data are defined in tables 5.3a to 5.3c below.

Table 5.3a - Observed and Adjusted data type definitions

Observed recovery (O):

An actual tag recovery (Bulk recovery for escapement).

Adjusted recovery (A):

An adjusted recovery takes into account Lost pin, No pin, and No data recoveries (non-tag recoveries). When a non-tag recovery occurs in a given stratum, it can be associated with the real tags in the stratum. For commercial and sport recovery data, the incidence of non-tags is relatively low in comparison with escapement data where they are potentially quite numerous. An observed recovery can be adjusted using this calculation:

$$A = O \times \left[1 + \frac{LP}{K} + \frac{ND \times (K + LP)}{K \times (K + LP + NP)} \right]$$

where:

K = no. of known (real) tag codes recovered for a particular stratum.
LP = no. of Lost pin recoveries for a particular stratum.
ND = no. of No data recoveries for a particular stratum.
NP = no. of No pin recoveries for a particular stratum.

Table 5.3b - Estimated data type definition

Estimated recovery (E):

Estimated recoveries are the estimated number of tags of a particular code recovered within a stratum. If adjusted recoveries are used, replace the "O" in the formula with "A".

Troll or Net recovery method:

$$E = O \times \frac{\text{Catch}}{\text{Sample}}$$

Sport recovery method:

$$E = O \times \left[\frac{\text{Catch}}{O^{*} \times \frac{\text{Sample}}{\text{MI}}} \right]$$

where:

O^{*} = the heads with known tag codes, Lost pins, and a portion of the No datas turned in to the decoding lab:

$$= K + LP + ND \times \frac{K + LP}{K + LP + NP}$$

MI = the incidence of marked fish in the sample

Escapement recovery method:

Adjusted recoveries are always used with escapement recoveries, because of the potential for a high incidence of non-tags.

$$E = A \times \frac{\text{Escapement}}{\text{Sample}}$$

Table 5.3c - Expanded data type definition

Expanded recovery:

Expanded recoveries are the estimated number of fish represented by a particular tag code recovered in a stratum.

$$X = E \times \frac{R}{T}$$

where:

R = no. fish associated with a particular tag code, i.e. number of fish released.
T = no. fish tagged with a particular tag code.

A sub-menu offering seven different combinations of the three data types is pulled down:

1. Observed	♦ observed recovery count
2. Estimated	♦ estimated recovery calculated count
3. Expanded	♦ expanded recovery calculated count
4. Obs-Est	♦ both observed and estimated
5. Obs-Exp	♦ both observed and expanded
6. Est-Exp	♦ both estimated and expanded
7. Obs-Est-Exp	♦ all three data types at the same time

5.3.8.2. Biological recovery report

Any combination of ten data types can be used in this report. The data types are described in the table below. For the lengths and weights, only one measurement type is allowed at one time (see section 5.4.1.4.3).

Table 5.4 - Data type definitions for the Biological recovery report

Observed:	- an actual tag recovery
Average-Length:	- sum of lengths / no. of observed recoveries with a length measurement
Length-Variance:	- standard variance calculation for observed lengths where the sample size is only the observed recoveries with a length measurement
Minimum-Length:	- minimum observed length
Maximum-Length:	- maximum observed length
Length-Sample-Size:	- observed recoveries with a length measurement
Average-Weight:	- same as length except using weight measurement
Weight-Sample-Size:	- observed recoveries with a weight measurement
Red-Color:	- count of chinook recoveries with red flesh color (or mixed)
White-Color:	- count of chinook recoveries with white flesh color (or mixed)

From this multi menu users can select combinations of data types:

```
            ┌─────────Multi-DataTypes──────────┐
            │Observed         Average-Length    │
            │Length-Variance  Minimum-Length    │
            │Maximum-Length   Length-Sample-Size│
            │Average-Weight   Weight-Sample-Size│
            │Red-Color        White-Color       │
┌───────────┴──────────────[ Move ]─────────────┴──────────┐
│\ = Quit, T = Top, B = Bottom, C = Clear all, A = Select all│
│ Use ARROWS to move cursor, <Return> = Finished selection  │
│  S = Select, U = UnSelect, PF1 = Toggle [Move]/[S or U]   │
└───────────────────────────────────────────────────────────┘
```

5.3.8.3. Spread Sheet Maker

Each column in a spreadsheet table can have a different data type associated with it. The data type is chosen from a list of 19 types which are described in the table below.

Table 5.5 - SPREAD SHEET MAKER: Data type definitions

Total released:
The sum of the "total released" data field for the tag codes selected for a row entry.

Total tagged:
The sum of the "total tagged" data field for the tag codes selected for a row entry.

Total un-clipped:
The sum of the "total un-clipped" data field for the tag codes selected for a row entry.

Total AD-Only:
The sum of the "total adipose fin clip only" data field for the tag codes selected for a row entry.

Released / Tagged:
The sum of the "total released" data field divided by the sum of the "total tagged" data field for the tag codes selected for a row entry.

% Tag loss:
The sum of the "% tag loss" data field for the tag codes selected for a row entry divided by the number of tag codes selected for a row entry.

Tagged / Released:
The sum of the "total tagged" data field divided by the sum of the "total released" data field for the tag codes selected for a row entry.

Mean size released:
The sum of the "total released" data field times the "release weight" data field for the tag codes selected for a row entry divided by the sum of the "total released" data field for the tag codes selected for a row entry.

Biomass released:
The sum of the "release weight" data field for the tag codes selected for a row entry.

Release count:
A count of the number of tag codes that were selected for a row entry.

Observed recoveries:
The sum of the "number observed" data field for the recovered tag codes selected for a row entry.

Estimated recoveries:
The sum of the estimated recoveries for the recovered tag codes selected for a row entry (see table 5.3b).

Expanded recoveries:
The sum of the expanded recoveries for the recovered tag codes selected for a row entry (see table 5.3c).

Table 5.5 - continued

Est. / No. Tagged:
Equal to the "Estimated recoveries" data type divided by the "Total tagged" data type.

Exp. / No. Released:
Equal to "Expanded recoveries" data type divided by the "Total released" data type.

Mean length recover.:
The sum of the "recovery length" data field divided by the "Observed recoveries" data type for the recovered tag codes selected for a row entry.

Mean weight recover.:
The sum of the "recovery weight" data field divided by the "Observed recoveries" data type for the recovered tag codes selected for a row entry.

Mean total age:
The sum of the "recovery year" data field minus the "brood year" data field divided by the "Observed recoveries" data type for the recovered tag codes selected for a row entry.

Biomass recovered:
The sum of the "recovery weight" data field multiplied by the "Observed recoveries" data type for the recovered tag codes selected for a row entry.

When the DATA-TYPE menu item is chosen, a sub-menu is pulled down to allow selection of a data type from the 19 different data types.

```
A. Total released
B. Total tagged
C. Total un-clipped
D. Total AD-Only
E. Released / Tagged
F. % Tag loss
G. Tagged / Released
H. Mean size released
I. Biomass released
J. Release count
K. Observed recoveries
L. Estimated recoveries
M. Expanded recoveries
N. Est. / No. Tagged
O. Exp. / No. Released
P. Mean length recover.
Q. Mean weight recover.
R. Mean total age
S. Biomass recovered
```

5.3.9. EXECUTE

After specifying the restrictions and configuring the report, the EXECUTE command supplies several options for running the report:

```
GO
OPTIONS
FILENAME
DEVICE
```

5.3.9.1. GO

By choosing the GO command, the program will create the command job file (filename.COM), and depending on the current DEVICE option setting, the program will submit the report job to a batch queue as well. A window pops up displaying the results of executing the GO command:

```
* GO WINDOW *
    Job TEST (queue SYS$BATCH, entry 237) started on SYS$BATCH
Press any key to continue...
```

The key feature of the GO command is to have the MRP-Reporter program create the report based on the current setup.

5.3.9.2. OPTIONS

The OPTIONS command is provided for two reasons. If the MRP-Reporter program is run from WorkArea ($WORK on the VAX moves a user to his work area directory), the program must be notified of this to execute correctly. The other special case is if the program is run after "$BE ing" a different user ($BE 'username' on the VAX changes a user into a different user), the program must also be notified of this to run properly. The OPTIONS command pulls down a sub-menu listing the various options:

```
|          |
|GO        |
|OPTIONS   |
| ----------|
||WORKAREA |       ♦ Insert "$ Work" command in command job file.
└|BE-USER  |       ♦ Insert "$ BE 'user'" command in command job file.
 |COMMENT  |       ♦ Insert a one line note in the command job file.
 -----------
```

[** Note: An OPTION setting is not saved in a Save-Set file. **]

5.3.9.3. FILENAME

The first command to choose is the FILENAME command, to name the report files requesting a file name without a file extension:

```
                                 |         |
                                 |GO       |
                                 |OPTIONS  |
                                 |FILENAME |
 ┌───────────────────────────────────────┐ |
 |.................... No extension      |-┘
 └──[ PF2 = HELP, "\" = ABORT ]──────────┘
```

There are various editing keys provided for flexible entry of the file name (see Appendix B). The file name is used for all of the report files created by the run. If a file name is not entered, the program will use the default name "MRP".

5.3.9.4. DEVICE

There are four methods available to run the report creation job. The DEVICE command provides selection of a run method from a pulldown sub-menu:

```
|         |
|GO       |
|OPTIONS  |
|FILENAME |
|DEVICE   |
└|----------------|
 |DAY-BATCH       |
 |NIGHT-BATCH     |
 |WEEKEND-BATCH   |
 |CREATE-JOB-FILE |
 |________________|
```

Choose from three different batch queues or write the command file, each with a specific purpose:

- The DAY-BATCH queue runs day and night at the standard VAX/VMS user priority level, but only provides three minutes of computing (CPU) time. After three minutes of CPU, the job will terminate whether finished creating the report or not.
- The NIGHT-BATCH queue only executes from 6:00 p.m. through to 8:00 a.m. the next morning and runs at a lower user priority level. It provides an unlimited amount of CPU time to complete the job.
- For major tasks, the WEEKEND-BATCH queue starts running late Friday afternoon until 8:00 a.m. the next Monday morning. This queue provides unlimited CPU time at the normal user priority level.
- If a report command job file is to be created but not executed immediately, the CREATE-JOB-FILE command will do this and then the job can be executed later in a batch queue or interactively.

5.3.10. MISC

There are numerous miscellaneous settings that can be altered to produce a variety of report configurations. This menu is where options are found for changing the sort order, rollup levels, time variables etc. which define the personality of a report. Listed below are the six possible MISC menu variants associated with the different report formats.

Hatchery, Biological recovery reports	**Catch Region recovery report**	**Summary recovery report**
MISC	MISC	MISC
TIME-VARIABLE	TIME-VARIABLE	ROLLUPS
ROLLUPS	ROLLUPS	NON-TAGS
NON-TAGS	SORT-ORDER	SORT-ORDER
SORT-ORDER	ID-SITE	CWT-RELEASE-REPORT
CWT-RELEASE-REPORT	NON-TAGS	PAGE-BREAK
PAGE-BREAK	CWT-RELEASE-REPORT	USE-TOTALS
USE-TOTALS	GET-INCOMPLETES	GET-INCOMPLETES
GET-INCOMPLETES		ADJUST-RECOVERIES

Release report	**Flat File builder**	**Spread Sheet Maker**
MISC	MISC	MISC
SORT-ORDER	ROLLUPS	NON-TAGS
USE-TOTALS	NON-TAGS	FILE-FOR-RELEASES
REPORT-TYPE	ONLY-RELEASES	GET-INCOMPLETES
FILE-FOR-RELEASES	SORT-ORDER	
GET-INCOMPLETES	FILE-FOR-RELEASES	
	GET-INCOMPLETES	

5.3.10.1. TIME-VARIABLE

A time variable determines the time resolution of the report. Up to twelve values may be specified for the time variable, which are printed horizontally across the top of each page in the report. The data is then printed in like manner. For example, if "Year-Recovery" is the time variable and is restricted to the years 1980 to 1985, then the data is summarized horizontally on the page by these six years.

This feature is only provided for the Hatchery, Catch Region, and Biological recovery reports. When TIME-VARIABLE is executed five different categories as shown in the resulting sub-menu printed below, are available.

TIME-VARIABLE

Year-Recovery	♦ Catch year
Month	♦ Catch month
Week	♦ Catch Month-Week (MMW)
Ageclass	♦ Catch year - Brood Year
Brood-Year	♦ Year eggs were hatched

5.3.10.2. ROLLUPS

Rollups provide a mechanism for reducing the amount of detail in a report. For the standard report formats a rollup can be imposed on individual levels in the sort order. This means that the data field levels used in the sort order define the detail levels that will appear in a report, therefore if a rollup is specified for one or more of these sorting levels, the sort level(s) disappear from the report reducing the amount of detail.

The Flat File builder module uses the rollup feature differently than the standard reports. A description will appear under the appropriate sub-heading below.

5.3.10.2.1. Hatchery, Biological, and Summary recovery reports

The Hatchery and Biological recovery report formats allow rollups to be imposed separately on Release keys, Tagcode key, and Recovery keys from the sort order. The Summary recovery report format doesn't allow rollups for Recovery keys. This ability is accessible via the sub-menu shown below (The Summary recovery report does not have the item "Recovery - NO" shown).

```
ROLLUPS
1. Release  - NO
2. Tagcode  - NO
3. Recovery - NO
```

This sub-menu allows the user to specify rollups for the release and recovery portions of the sort order separately. The word "NO" to the right of each option signifies that there are no rollups currently specified for that option. When the word "YES" appears in place of "NO", then rollups are currently active for that option. Choosing an option from this menu allows rollups to be set up or cleared for that option.

Choosing "1. Release" opens a selection list window (shown below), listing each of the data field names from the release portion of the sort order, allowing selection of the fields to roll up. Imposing rollups on release data fields automatically forces a rollup for the tag code field.

The release field rollup selection list:

```
                   ┌* ROLLUPS *┐
                   │Prov/State │
                   │Prod-Area  │
                   │Hatchery   │
                   │Species    │
                   │Brood-Year │
┌──────────────────┴─[ Move ]──┴────────────────┐
│\ = Quit, T = Top, B = Bottom, C = Clear all, A = Select all│
│  Use ARROWS to move cursor, <Return> = Finished selection  │
│   S = Select, U = UnSelect, PF1 = Toggle [Move]/[S or U]   │
└───────────────────────────────────────────────┘
```

To rollup the tag code field but not other release fields, use the "2. Tagcode" option. This option is a toggle, choosing it when set to "NO" changes it to "YES" and vice versa.

Option "3. Recovery" will open a selection list window with the data field names from the recovery portion of the sort order, allowing selection of the fields to roll up (Hatchery and Biological recovery reports only).

```
                   ┌* ROLLUPS *─┐
                   │Recovery-Year│
                   │Gear         │
                   │Catch-Region │
┌──────────────────┴─[ Move ]───┴───────────────┐
│\ = Quit, T = Top, B = Bottom, C = Clear all, A = Select all│
│  Use ARROWS to move cursor, <Return> = Finished selection  │
│   S = Select, U = UnSelect, PF1 = Toggle [Move]/[S or U]   │
└───────────────────────────────────────────────┘
```

5.3.10.2.2. Catch Region recovery report

A selection list window (shown below) appears when the ROLLUP command is executed for this report format providing access to the four components of the sort order. See the previous section for a description of how this feature works.

```
                    ┌* ROLLUPS *┐
                    │Catch-Region│
                    │Recovery-Year│
                    │Site-ID      │
                    │Species      │
          ┌─────────┴──[ Move ]───┴──────────────────────┐
          │\ = Quit, T = Top, B = Bottom, C = Clear all, A = Select all│
          │  Use ARROWS to move cursor, <Return> = Finished selection  │
          │   S = Select, U = UnSelect, PF1 = Toggle [Move]/[S or U]   │
          └────────────────────────────────────────────────────────────┘
```

5.3.10.2.3. Flat File builder

There is only one kind of rollup available for the Flat File builder, the Time-Area stratum rollup. A definition of the stratum used describes this rollup. The stratum is defined differently depending on the recovery method as shown in the table below.

Table 5.6 - Flat File builder rollup stratum definition

Recovery method	Fields defining a stratum
Troll and Net	Recovery year Catch region Species Statistical week
Sport	Recovery year Catch region Species Month
Escapement	Recovery year Catch region Species Recovery site code Recovery site number Run type Sample age type

Imposing the rollup will reduce the number of output records roughly by half of the detailed recovery flat file. When the ROLLUP command is executed a sub-menu is pulled down providing the two options shown below.

```
ROLLUPS
-------------------
None
Time-Area stratum
```

5.3.10.3. SORT-ORDER

The SORT-ORDER command provides a degree of control over the order that the standard reports and the Flat File builder print the information extracted from the database. Additionally, the SORT-ORDER feature provides subtotalling for each level in the sort order (with exception to the Release Report and Flat File builder).

When a sort order is selected, if any rollups have been set up (excluding the Release Report and Flat File builder), they will be cleared because rollup settings depend on the sort order.

5.3.10.3.1. Hatchery, Biological, and Summary recovery reports

The sort order consists of up to nine levels (six for the Summary recovery report) of data fields. These levels show the detail levels that the report will use. There are four slightly different orders to choose from when the SORT-ORDER sub-menu pops up:

Hatchery and Biological recovery reports	Summary recovery report
SORT-ORDER	SORT-ORDER
1. PS-Prod-Hat-Spec-BY-Tag-RY-Gear-CR	1. PS-Prod-Hat-Spec-BY-Tag
2. PS-Prod-Spec-Hat-BY-Tag-RY-Gear-CR	2. PS-Prod-Spec-Hat-BY-Tag
3. PS-Hat-Spec-BY-Tag-RY-Gear-CR	3. PS-Hat-Spec-BY-Tag
4. PS-Spec-Hat-BY-Tag-RY-Gear-CR	4. PS-Spec-Hat-BY-Tag

Each of the field name levels are separated by a "-" (dash) character, and are shown in the table below.

Table 5.7 - Hatchery, Biological, and Summary recovery report sort order levels

PS	- Province/State of release
Prod	- Production area
Hat	- Hatchery
Spec	- Species
BY	- Brood year
Tag	- Tag code (CWT)
Hatchery and Biological recovery reports only	
RY	- Recovery year
Gear	- Gear used
CR	- Catch region

Totals are printed for each level in the sort order (depending on the setting of the ROLLUPS and USE-TOTALS options). As the value of the data field of a given level changes, a total is printed for that level only if more than one value in a lower level field is reported. i.e. if several tag codes are reported for a 1983 brood year, and the brood year changes to 1984, then a total of the data reported for the 1983 brood year is printed.

5.3.10.3.2. Catch Region recovery report

The sort order consists of up to four levels of data fields. These levels show the detail levels that the report will use. There are two different orders to choose from:

```
        |SORT-ORDER
|------------------|
|1. CR-RY-Site-Spec|
|2. RY-CR-Site-Spec|
```

Each of the field name levels are separated by a "-" (dash) character and shown in the table below.

Table 5.8 - Listing of Catch Region recovery report sort order levels

CR	- Catch Region
RY	- Recovery year
Site	- Site: Hatchery, Release site, Stock site, or Production area
Spec	- Species

Totals are printed only for the first two levels in the sort order (depending on the setting of the ROLLUPS option). As the value of the data field at a given level changes, a total is printed for that level.

5.3.10.3.3. Release reports

The sort order consists of up to six levels of data fields. These levels show the detail levels that the report will use. There are four different orders to choose from:

SORT-ORDER

1. PS-Prod-Hat-Spec-BY-Tag
2. PS-Prod-Spec-Hat-BY-Tag
3. PS-Hat-Spec-BY-Tag
4. PS-Spec-Hat-BY-Tag

Each of the field name levels are separated by a "-" (dash) character and are shown in table 5.7. Totals are printed for each hatchery in the report depending on the setting of the USE-TOTALS option.

5.3.10.3.4. Flat File builder

The sort order is limited to one level and is a field in the MRP database. Normally multiple levels are needed, therefore users should seek other computer programs that perform the sort that they desire with the output files from the Flat File builder (such as the VAX/VMS Sort utility). The sub-menu to select a sort order from, is shown below.

SORT-ORDER

1. Tagcode
2. Hatchery
3. Site-Released
4. Stock-Site
5. Prod-Area
6. Species
7. Brood-Year

5.3.10.4. NON-TAGS

A non-tag is a "pseudo" tag code created for recovered fish that had their adipose fin clipped but shed their CWT or never had one. A non-tag consists of a special two character code (depends on circumstances), a dash "-", and the three digit species Hart code (see appendix C). The program will print these recoveries in the report if this is desired.

There are three options available for using non-tags:

NON-TAGS	
Yes	♦ Select normal CWT's and non-tags
No	♦ Reject non-tags
Only	♦ Only select non-tags, reject normal CWT's

Spread Sheet Maker only

NON-TAGS	
Default	♦ Use column setting
Yes	♦ Select normal CWT's and non-tags
No	♦ Reject non-tags
Only	♦ Only select non-tags, reject normal CWT's

The menu above with the option "Default" appears when setting up global restrictions. Choosing the Default option, allows each column to have the NON-TAGS option set individually otherwise the global setting overrides any column settings of NON-TAGS.

This option is available for all the standard reports as well as the Flat File builder and Spread Sheet Maker. For a list of the valid non-tag codes, see Appendix C.

5.3.10.5. CWT-RELEASE-REPORT

To receive a release report for the tagged releases that produce a given recovery report, the CWT-RELEASE-REPORT command offers several different options:

CWT-RELEASE-REPORT	
None	♦ Release report is suppressed
Detailed	♦ 1 line of release info. per tag code
Summary	♦ 1 line of release info. per hatchery
1. Only Detailed	♦ Same as "Detailed" but suppress recoveries
2. Only Summary	♦ Same as "Summary" but suppress recoveries

This option is available for the Hatchery, Catch Region, Biological, and Summary recovery reports. The contents of the release report are described in section 7.1.

5.3.10.6. PAGE-BREAK

Normally the program will put as many report lines on a page as possible, but if desired, each hatchery can be printed on a new page. The PAGE-BREAK option satisfies this requirement through the following sub-menu:

PAGE-BREAK

No	♦ No new page used for each hatchery
Yes	♦ Use a new page for each hatchery

This option is available for the Hatchery, Biological, and Summary recovery reports.

5.3.10.7. USE-TOTALS

This program prints totals for each sorting level which increases the length of a report significantly. An option is provided to control the printing of totals. The USE-TOTALS command uses the following sub-menu to change this feature:

USE-TOTALS

Yes	♦ Use totals with the detail
No	♦ Suppress the printing of the totals
Only	♦ Suppress the printing of the detail

This option is available for the Hatchery, Biological, and Summary recovery reports and the Release report.

5.3.10.8. GET-INCOMPLETES

When data records for tagged releases are entered into the MRP database, they are considered "Complete" or "Incomplete" based on certain criteria. This program allows rejection of incomplete releases or not. There are three options to choose from, to deal with incompletes:

GET-INCOMPLETES

Yes	♦ Select completes and incompletes in the report
No	♦ Reject incompletes
Only	♦ Only select incompletes, reject completes

Spread Sheet Maker only

GET-INCOMPLETES	
Default	♦ Use column setting
Yes	♦ Select completes and incompletes in the report
No	♦ Reject incompletes
Only	♦ Only select incompletes, reject completes

The menu above with the option "Default" appears when setting up global restrictions. Choosing the Default option, allows each column to have the GET-INCOMPLETES option set individually, otherwise the global setting overrides any column settings of GET-INCOMPLETES.

This option is available for all of the standard reports as well as the Flat File builder and the Spread Sheet Maker.

5.3.10.9. ID-SITE

The Catch Region recovery report prints a site name and species name as a detail line for each recovery year and catch region in the report (depending on the setting of the ROLLUPS option). There are four different site types available from the ID-SITE sub-menu:

ID-SITE

HATCHERY
RELEASE-SITE
STOCK-SITE
PRODUCTION-AREA

For example, to find the answer to the following question:

"From what stocks did the fish recovered in the Georgia Strait troll fishery for years 1984 and 1985 originate?"

the ID-SITE option should be set to "STOCK-SITE".

5.3.10.10. REPORT-TYPE

There are two formats available for the Release report. The "Header" report prints one line of release information for each tag code selected in the report and the "Dump" report prints every data field available in a release record, using several print lines per tag code. This sub-menu appears to allow the report type selection:

REPORT-TYPE

Header
Dump

5.3.10.11. ONLY-RELEASES

The Flat File builder is capable of creating both a release and a recovery output file. If only the release records are needed, the ONLY-RELEASES option should be used to indicate this requirement. This sub-menu pops up providing the means for changing this option.

ONLY-RELEASES

No	♦ Print both releases and recoveries
Yes	♦ Only print releases

5.3.10.12. FILE-FOR-RELEASES

There are two kinds of release databases available for access. The database most users are familiar with is the Coded Wire Tag (CWT) database. The other database contains tag codes created from various fin clipping combinations. Currently, there is no recovery information for the Fin Clip data records. To restrict a report to a particular release database this sub-menu is provided:

FILE-FOR-RELEASES

CWT	♦ Use the CWT database only
FinClip	♦ Use the Fin Clip database only
Both	♦ Use both the CWT and FinClip databases

Spread Sheet Maker only

FILE-FOR-RELEASES

Default	♦ Use column setting
CWT	♦ Use the CWT database only
FinClip	♦ Use the Fin Clip database only
Both	♦ Use both the CWT and FinClip databases

The menu above with the option "Default" appears when setting up global restrictions. Choosing the Default option, allows each column to have the FILE-FOR-RELEASES option set individually, otherwise the global setting overrides any column settings of FILE-FOR-RELEASES.

This option is available for the Flat File builder and the Spread Sheet Maker.

5.3.10.13. ADJUST-RECOVERIES

The Summary recovery report has an option for adjusting recovery counts for Lost pin, No pin, and No data tag recoveries. By default this adjustment is not calculated for commercial or sport recoveries (automatically calculated for escapement recoveries). A menu is provided to allow forcing this adjustment, if desirable.

ADJUST-RECOVERIES

No	♦ Use unadjusted "real" recoveries only.
Yes	♦ Adjust observed recoveries for non-tags.

[** Note: This feature is also available for the Hatchery and Catch Region recovery reports and the Spread Sheet Maker via the DATA-TYPE command. **]

5.3.11. QUIT

To exit the program back to the VMS operating system, execute the QUIT command. This pulls down a sub-menu which requires a YES-NO response. This prevents an accidental loss of any restrictions by pressing the wrong key:

NO
YES

To return to the System Access menu, press the "\" (backslash) key at the top menu level of the Report Setup menu to pop up this window:

```
 ---------* RETURN TO MRP ACCESS MENU *---------
|  You have pressed the "\" (backslash) key.    |
|This will destroy the current settings and     |
|return control to the MRP ACCESS MENU.         |
|                                               |
|     Confirm this action (Y or N) ? N          |
 -----------------------------------------------
```

5.4. KEYWORDS Sub-menu

When a keyword name is chosen from the KEYWORDS menu, a sub-menu is pulled down offering several commands that are relevant to the particular keyword. Not all keywords will produce the same sub-menu. Four possible sub-menus are:

```
|          |        |          |        |         |        |          |
|RESTRICT  |        |RESTRICT  |        |RESTRICT |        |RESTRICT  |
|SHOW      |   or   |SHOW      |   or   |SHOW     |   or   |SHOW      |
|CLEAR     |        |CLEAR     |        |CLEAR    |        |CLEAR     |
|TABLE-LOOK|        |PARTITION |         ---------         |TABLE-LOOK|
 ----------          ----------                            |PARTITION |
                                                            ----------
```

depending on the keyword selected and the report format.

5.4.1. RESTRICT

Each data field has a finite set of values that it can take on. Some of the fields are restricted by specifying a numeric minimum and maximum range, while other fields have tables to choose values from. Restrictions limit the number of data records that are accepted for the report output. To restrict a particular data field, specify the values that are wanted for the field which "restricts" the field to these selected values. Restrictions are additive which means that if two or more different fields have restrictions imposed on them, only records that pass all of these restrictions will be accepted.

The "Selection Lists" section describes the fields that have a short table of possible values and are restricted using a selection window. For a description of fields with a large set of possible values, see the section on "Large tables" (section 5.4.1.3). The "Ranges" section (section 5.4.1.2) describes the fields restricted by specifying a numeric minimum and maximum range. There are several data fields with special restriction options. These fields are described in the section for special restrictions (section 5.4.1.4).

5.4.1.1. Selection Lists (Short tables)

Fields with value tables that can be completely displayed, fall into the "Short tables" category. For a description of how a selection list works, see section 3.3. The table below lists the data fields that use selection lists for restricting values.

Table 5.9 - Keywords/data fields with short value tables

Release Fields:
SPECIES, BROOD-YEAR, DATE-RELEASED (Year,Month), PROD-AREA, REL-PROV/STATE, AGENCY, STUDY-TYPE, REARING-TYPE, CO-ORDINATOR, REL-RUN-TYPE, STAGE, METHOD, EXP-SURVIVAL (Flag), PROGRAM-TYPE, TYPE-STOCK

Recovery Fields:
YEAR-RECOVERY, REGION-CATCH, GEAR, REC-PROV/STATE, STAT-AREA, RECOVERY-TYPE, REC-RUN-TYPE, SAMPLE-AGE, MONTH, AGE-CLASS, WEEK, GRADE, COLOR, SEX-MATURITY, LOC-SAMPLE, DELIVERY, SCALE-AGE

5.4.1.2. Numeric Ranges

To restrict a field that only has numeric values and the possible range of values is large, the program allows the user to specify a minimum and a maximum value for the field. When the program is instructed to create the report, only records with values for that field within the specified range will be selected. The table below lists all of the data fields that use numeric value ranges for restrictions.

Table 5.10 - Keywords/data fields restricted with a value range

Release Fields:
DATE-RELEASED (Day), SIZE, DAYS-HELD, REPLICATES, NUM-TAGGED, ADIPOSE-ONLY, UNCLIPPED, TOTAL-RELEASED, %TAG-LOSS, EXP-SURVIVAL

Recovery Fields:
LENGTH, WEIGHT

Catch/Sample Fields:
CATCH, SAMPLE, RATIO, AWARE-SPORT

For example, to restrict releases to a range of TOTAL-RELEASED values:

```
                                  |RESTRICT|
 ┌────────────────────────────────┐        |
 |From Total released: 10000....  |        |
 |  To Total released: 20000      |────────┘
 └─[\ = Cancel | PF1 = Finished]──┘
```

The starting value 10000 fish is entered, the <Enter> key pressed, the ending value 20000 fish is entered and the <PF1> function key pressed to finish the entry. Various string editing keys are available for editing the values (see Appendix B).

5.4.1.3. Large tables

When restricting data fields that have a large value table associated with it, the program allows values separated by commas, and ranges for numeric codes entered using a ":" (colon) separating character. For restricting character values, the only method of restriction is to specify partial or whole values separated by commas.

Table 5.11 - Keywords/data fields with large value tables

Release Fields:
TAGCODE, EXPERIMENT-ID, HATCHERY, SITE-RELEASED, STOCK-SITE

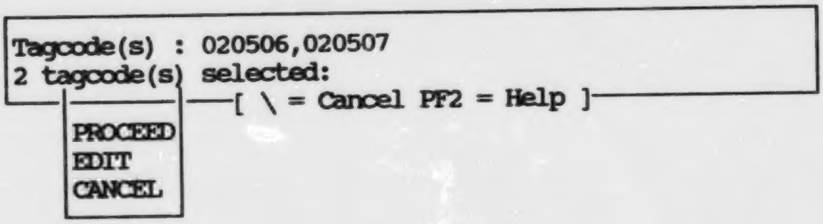
Recovery Fields:
SUB-AREA, SPORT-LOCATION, ESCAPE-SITE

5.4.1.3.1. TAGCODE, EXPERIMENT-ID

TAGCODE and EXPERIMENT-ID values are specified as character strings therefore they are restricted by specifying codes separated by "," comma characters. When the RESTRICT command is selected, a sub-menu is pulled down displaying two choices:

```
TAGCODE
|           |
|RESTRICT   |
||───────────|
||ADD-TO-LIST|
||EDIT-LIST  |
└└───────────┘
```

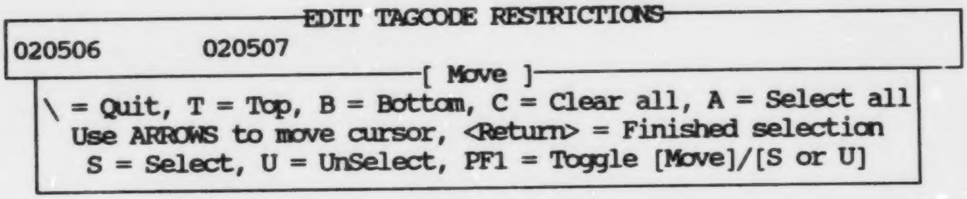
This allows some extra flexibility in the restriction process. If ADD-TO-LIST is chosen, then all restricted values specified for this data field are added to the current restriction list for this field using this window for entering the values:



```
Tagcode(s) : 020506,020507
2 tagcode(s) selected:
             [ \ = Cancel PF2 = Help ]
   PROCEED
   EDIT
   CANCEL
```

The two codes in the above example are typed in and accepted by pressing the <Enter> key, this causes a sub-menu to pull down offering three options for the restriction. If PROCEED is chosen, the program accepts the two codes and prompts for more codes. Choosing EDIT opens a selection list window allowing the user to discard any of the two selected codes before PROCEEDing. The CANCEL command ignores the selection of the two codes and the program proceeds to prompt for more tag codes. After executing one of the sub-menu commands, the program removes the sub-menu.

If EDIT-LIST is chosen, the user can delete values from the current restriction list for this field using this selection list window:



```
                    EDIT TAGCODE RESTRICTIONS
020506          020507
                           [ Move ]
 \ = Quit, T = Top, B = Bottom, C = Clear all, A = Select all
   Use ARROWS to move cursor, <Return> = Finished selection
    S = Select, U = UnSelect, PF1 = Toggle [Move]/[S or U]
```

For a description of Selection List windows, see section 3.3.

5.4.1.3.2. HATCHERY, SITE-RELEASED, STOCK-SITE, ESCAPE-SITE

All four of these data fields are restricted in the same manner. Each value for these fields consists of a numeric code or a name (character string). The values can be specified with either the name or the code using "," (commas) to separate values. The numeric codes can be specified in a range format using the ":" (colon) character.

When the RESTRICT command is executed, a sub-menu is pulled down offering two choices:

```
HATCHERY
|          |
|RESTRICT  |
||------------|
||ADD-TO-LIST |
||EDIT-LIST   |
|_|___________|
```

This allows some extra flexibility in the restriction process. If ADD-TO-LIST is chosen, then all restricted values specified for this data field are added to the current restriction list for this field using this window for entering the values:

```
 ______________________________________________________________
|Site(s) :  *qualicum,nanaimo,105:108                          |
|7 sites selected:                                             |
|_|-------|------[ \ = Cancel, * = subsearch ]-----------------|
  |PROCEED|
  |EDIT   |
  |CANCEL |
  |_______|
```

For the above example, the program promptly reports that seven sites (in this case hatcheries) have been selected. The first part "*qualicum" selects all name values that have the text "qualicum" somewhere in the name because of the "*" (asterisk) appearing at the front of the value. The second part "nanaimo" selects all name values beginning with the text "nanaimo". Finally the range "105:108" selects all valid codes in the code range 105 through to 108.

If PROCEED is chosen, the program accepts the sites and prompts for more sites. Choosing EDIT opens a selection list window allowing the user to discard any of the selected sites before PROCEEDing. The CANCEL command ignores the selection of the sites and prompts for more. After executing one of the sub-menu commands, the program removes the sub-menu.

If EDIT or EDIT-LIST is chosen, values may be deleted from the current restriction list for this field using this selection list window:

```
     ----------------EDIT HATCHERIES----------------------
    |100  102  126  105  106  107  108                    |
 ---------------------------[ Move ]-------------------------
|\ = Quit, T = Top, B = Bottom, C = Clear all, A = Select all|
|  Use ARROWS to move cursor, <Return> = Finished selection  |
|   S = Select, U = UnSelect, PF1 = Toggle [Move]/[S or U]   |
|-------------------BIG QUALICUM RIVER (GSVI-BC)-------------|
```

The bottom of the message window displays the name, production area code, and province/state of the currently highlighted hatchery code in the list. For a description of Selection List windows, see section 3.3.

5.4.1.3.3. SUB-AREA

Sub area values are numeric codes that are restricted by specifying the codes separated by "," (commas) or as ranges using ":" (colons). When RESTRICT is executed, a sub-menu is pulled down presenting two choices:

```
SUB-AREA
|           |
|RESTRICT   |
| |------------|
| |ADD-TO-LIST |
| |EDIT-LIST   |
|_|____________|
```

Choosing ADD-TO-LIST produces this window:

```
 ______________________________________________________________
|Sub area(s) : 51:55,100:102,125                               |
|9 sub areas selected:                                         |
|______|--------|--[ \ = Cancel PF2 = Help ]-------------------|
       |PROCEED |
       |EDIT    |
       |CANCEL  |
       |________|
```

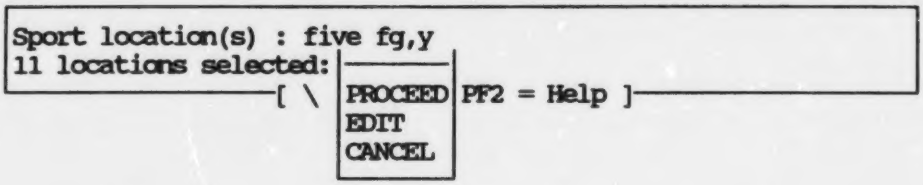
Nine sub areas were selected with the above restriction request example. The range "51:55" selects sub areas 51 through 55, and "100:102" selects areas 100 through 102, and lastly "125" selects sub area code 125. See section 5.4.1.3.2 for a description of the commands: PROCEED, EDIT, CANCEL, and EDIT-LIST.

5.4.1.3.4. SPORT-LOCATION

Sport location values are seven character codes that are restricted by specifying the codes separated by "," (commas). Partial codes can be entered which select all codes that begin with the text entered. When RESTRICT is executed, a sub-menu is pulled down offering two choices:

```
SPORT-LOCATION
|           |
|RESTRICT   |
| |------------|
| |ADD-TO-LIST |
| |EDIT-LIST   |
|_|____________|
```

Choosing ADD-TO-LIST produces this window:



```
Sport location(s) : five fg,y
11 locations selected:
                        [ \  PROCEED  PF2 = Help ]
                             EDIT
                             CANCEL
```

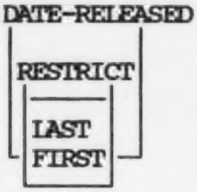
This restriction request selected eleven sport locations. The first part "five fg" selected the code "FIVE FG" and the second part "y" chose all codes beginning with "Y". See section 5.4.1.3.2 for a description of the commands: PROCEED, EDIT, CANCEL, and EDIT-LIST.

5.4.1.4. Special cases

There are 15 keywords that pull down special sub-menus. Eight of these keywords use the identical sub-menu and have already been described in the previous sub-section, therefore this section will describe the remaining seven, namely DATE-RELEASED, SIZE, AGE-CLASS, LENGTH, WEIGHT, AWARE-SPORT, and RATIO.

5.4.1.4.1. DATE-RELEASED

The DATE-RELEASED field consists of six distinct data fields. These fields are the release DAY, MONTH, and YEAR for two recordings of the release date, namely a FIRST and LAST date released:



```
DATE-RELEASED
 RESTRICT
  LAST
  FIRST
```

Choose LAST to restrict the last release date or FIRST to restrict the first release date. The FIRST date released is not guaranteed to always be available, i.e. if the entire release occurs on the same day, then only the LAST date released fields are filled in. After choosing FIRST or LAST, another sub-menu appears offering choices for YEAR, MONTH, and DAY:

```
DATE-RELEASED
│         │
│RESTRICT │
│┌─────┐  │
││LAST │  │
└│┌─────┴┐─┘
 └│YEAR  │
  │MONTH │
  │DAY   │
  └──────┘
```

5.4.1.4.2. SIZE (release)

The SIZE keyword provides restriction capabilities for two different data fields. These are release LENGTH and release WEIGHT. They are restricted separately by this sub-menu:

```
SIZE
│         │
│RESTRICT │
│┌───────┐│
││LENGTH ││
└│WEIGHT │┘
 └───────┘
```

5.4.1.4.3. AGE-CLASS

There are two types of age classes that can be utilized. These are "Total Age" and "Ocean Age". Total Age is defined to be the difference between the year of recovery and the brood year. Ocean Age is defined to be the difference between the year of recovery and the release year.

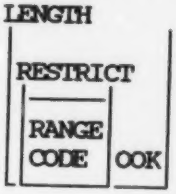
When the AGE-CLASS keyword is restricted, a sub-menu appears requesting the age class type to use:

```
AGE-CLASS
│         │
│RESTRICT │
│┌──────────┐
││TOTAL-AGE │
└│OCEAN-AGE │
 └──────────┘
```

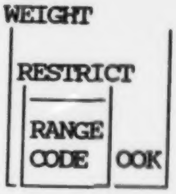
After choosing an age class type, the program will allow restriction of the AGE-CLASS field using a selection list.

5.4.1.4.4. LENGTH, WEIGHT (recovery)

Associated with the recovery LENGTH and WEIGHT is a type code. This code indicates the type of measurement used when sampling these data items. When the RESTRICT command is executed, a sub-menu is pulled down allowing the RANGE to be restricted or the type CODE to be changed:

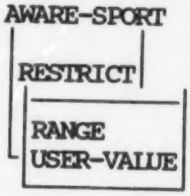


and



5.4.1.4.5. AWARE-SPORT

This keyword allows restriction of the sport awareness factor used for calculating estimated sport recoveries. Two different parts for this keyword can be restricted, the range of awareness factors, and a user substituted awareness factor. When the RESTRICT command is executed, a sub-menu is pulled down allowing the RANGE to be restricted or the substituted USER-VALUE to be changed:



The range and the substitution value work together to restrict the report run. If an awareness factor doesn't exist, is invalid, or isn't within the range specified; the awareness factor is set to the user substituted value. If the user value is equal to zero, then all awareness factors that are outside the range, invalid, or non-existent, will cause the corresponding observed recovery record to be rejected from the report.

A default substitution value of 0.252 for all species and all sport fisheries is set by the MRP-Reporter program, because of wide acceptance in the MRP user community.

5.4.1.4.6. RATIO

This keyword allows restriction of the commercial catch/sample ratio used for calculating estimated commercial recoveries. There are two different parts of this keyword that can be restricted: the range of catch/sample ratios and a user substitution ratio value. When the RESTRICT command is executed, a sub-menu is pulled down allowing the RANGE to be restricted or the substitution USER-VALUE to be changed:

```
RATIO
|         |
|RESTRICT |
| ---------------
| |RANGE        |
└ |USER-VALUE   |
  ---------------
```

Restricting a range of ratios will cause the report run to accept only recovery records that have an associated catch/sample ratio that fits the specified range. The user substitution ratio value is used only when a ratio doesn't exist or is invalid. A default substitution value of 1.0 is set by the MRP-Reporter program.

5.4.2. SHOW

The SHOW command at this menu level works almost identically to the SHOW command at the top command level of the Report Setup menu. The difference between the two is at this level only the keyword under which SHOW is currently executing has its restrictions revealed. For example, to see what hatcheries have been selected for this Report-Set, select SHOW from the HATCHERY keyword sub-menu:

```
HATCHERY
|           |
|RESTRICT   |
|SHOW       |
| ----------------------
| |CURRENT-REPORT-SET  |
└ |ALL-REPORT-SETS     |
  ----------------------
```

and choosing CURRENT-REPORT-SET will produce:

```
------------------------------CURRENT RESTRICTIONS------------------------------
|HATCHERIES restricted: (2)                                                    |
|0100-BIG QUALICUM RIVER        0102-LITTLE QUALICUM R                         |
--------------------------------------------------------------------------------
                  | |C|Press <Space> when finished viewing|
                  └ |A-------------------------------------
                    -----------------
```

If ALL-REPORT-SETS was executed instead, hatchery restrictions for all created Report-Sets would have been displayed.

5.4.3. CLEAR

The CLEAR command will re-initialize restrictions to the program defaults for the currently highlighted keyword name.

5.4.4. TABLE-LOOK

This command is not available for all data fields. When this command is executed for data fields with short value tables, a Display window will pop up showing all or most of the table (see section 3.3 for Display windows).

For data fields with large value tables, the program will first request a list of the values to look up, then pop up a Display window showing the details for each value that was found. Section 5.1.3. above provides the details for specifying the value list to search for.

5.4.5. PARTITION - Spreadsheet only

For data fields that are restricted by specifying a numeric range (see Table 5.10), a range PARTITION must be specified when one of these fields is used as a level in the ROW variable specification. For example, a range partition for the TOTAL-RELEASED data field is entered:

```
                   TOTAL-RELEASED
                   |         |
                   |RESTRICT |
                   |SHOW     |
                   |CLEAR    |
                   |PARTITION|
     ┌──────────────────────────┘
     |Partition: 20            |
     └───[ '\' = Cancel ]──────┘
```

Entering the value "20", will sub-divide the range specified for restricting this field into twenty equal intervals (if TOTAL-RELEASED is part of the ROW). When the spreadsheet is generated, the program will use these intervals (partitions) for determining how to accumulate the data.

5.5. Default Restrictions/Settings

Default values and settings are pre-set by the MRP-Reporter program to give the report setup process a starting point.

5.5.1. Restrictions

Default restrictions have been imposed on a few of the restrictable features of the program. Accepting these defaults without imposing any other restrictions would essentially accept all data (applicable to the report being setup) in the MRP database.

All of the report formats set initial values for the user substitution sport awareness factor value and the user substitution catch/sample ratio value. They also set an initial age class type. The user substitution values are only used when a problem with catch and/or sample data occurs.

Sport awareness factor user value = 0.252
Catch/sample ratio user value = 1.0
Age class type = Total Age

The Biological recovery report and the Summary recovery report both set initial values for the recovery Length type and Weight type.

Length type = Fork length
Weight type = Round weight

The spreadsheet format sets initial values for the range partitions that are used for partitioning the row variable if a range field is part of the row variable.

Range partitions:

Release length:	20
Release weight:	20
Days held:	5
Replicates:	5
Number tagged:	20
AD-Only:	20
Un-clipped:	20
Total released:	20
Tag loss:	20
Expected survival:	20
Recovered length:	20
Recovered weight:	20
Catch:	50
Sample:	50
Catch/Sample ratio:	10
Sport awareness factor:	10

5.5.2. Miscellaneous settings

When the MRP-Reporter program enters the Report Setup menu, all of the miscellaneous settings are initialized to certain default values, depending on which report format is to be configured.

There are two default settings that are common among all of the different report formats:

DEVICE: DAY-BATCH
REPORT FILE NAME: MRP

5.5.2.1. Hatchery recovery report

TIME-VARIABLE: Year-Recovery
ROLLUPS: (none)
NON-TAGS: No
SORT-ORDER: PS-Prod-Hat-Spec-BY-Tag-RY-Gear-CR
CWT-RELEASE-REPORT: (none)
PAGE-BREAK: No
USE-TOTALS: Yes
GET-INCOMPLETES: Yes
DATA-TYPE: Estimated
ADJUST-RECOVERIES: Troll,Net,Sport - No; Escapement - Yes for Estimated and Expanded data

5.5.2.2. Catch Region recovery report

TIME-VARIABLE: Year-Recovery
ROLLUPS: (none)
SORT-ORDER: CR-RY-Site-Spec
ID-SITE: HATCHERY
NON-TAGS: No
CWT-RELEASE-REPORT: (none)
GET-INCOMPLETES: Yes
DATA-TYPE: Estimated
ADJUST-RECOVERIES: Troll,Net,Sport - No; Escapement - Yes for Estimated and Expanded data

5.5.2.3. Biological recovery report

TIME-VARIABLE: Year-Recovery
ROLLUPS: (none)
NON-TAGS: No
SORT-ORDER: PS-Prod-Hat-Spec-BY-Tag-RY-Gear-CR
CWT-RELEASE-REPORT: (none)
PAGE-BREAK: No
USE-TOTALS: Yes
GET-INCOMPLETES: Yes
DATA-TYPE: Observed, Average-Length, Length-Sample-Size, Average-Weight, Weight-Sample-Size

5.5.2.4. Summary recovery report

ROLLUPS:	(none)
NON-TAGS:	No
SORT-ORDER:	PS-Prod-Hat-Spec-BY-Tag
CWT-RELEASE-REPORT:	(none)
PAGE-BREAK:	No
USE-TOTALS:	Yes
GET-INCOMPLETES:	Yes
ADJUST-RECOVERIES:	Troll,Net,Sport - No; Escapement - Yes for Estimated and Expanded data

5.5.2.5. Release report

SORT-ORDER:	PS-Prod-Hat-Spec-BY-Tag
USE-TOTALS:	Yes
REPORT-TYPE:	Header
FILE-FOR-RELEASES:	CWT
GET-INCOMPLETES:	Yes

5.5.2.6. Flat File builder

ROLLUPS:	(none)
NON-TAGS:	No
ONLY-RELEASES:	No
SORT-ORDER:	Tagcode
FILE-FOR-RELEASES:	CWT
GET-INCOMPLETES:	Yes

5.5.2.7. Spread Sheet Maker

NON-TAGS:	No
FILE-FOR-RELEASES:	CWT
GET-INCOMPLETES:	Yes
DATA-TYPE:	Observed recoveries
ROW-SORT:	Ascending
ROW:	TAGCODE
ADJUST-RECOVERIES:	Troll,Net,Sport - No; Escapement - Yes for Estimated and Expanded data

Chapter 6 - REPORT FILES

Several different files are created when a report run is submitted. Each file serves a different purpose in the resulting report. File extensions used by a report run are:

.LIS, .LOG, .REL, .REC, .ROL, .TAB, .DAT

Not all of these extensions are used by all report formats. The filename that is specified for the report is the name used with these extensions.

6.1. Run description file (.LIS)

This file uses the ".LIS" file extension. All report formats will produce this file.

This file lists all of the report restrictions and settings that were imposed during the report setup phase. It also lists any warnings or special information about the report that was selected. The number of releases that were selected is printed as well. Finally any default restrictions or forced settings that the program assumes, are recorded. An example is provided in the figure below; it is the ".LIS" file associated with the example Hatchery recovery report in chapter 7.1.1.

```
MRPReporter run: 18-May-1988 at  9:41am  (Wednesday)  by: KUHN
        File: DISK$MAN$USER:[KUHN.MRP.DEVELOP]:022222

1. General Restrictions/Settings.
---------------------------------
  MRP version     : 3.0
  Report no.      : 1        -  Hatchery Recoveries
  Report-Set #    : 1
----------------------------------
2. Database Restrictions/Settings.
----------------------------------
  * REPORT-SET BEGIN:
    Label: 022222
    Title1: Recoveries of tag code 022222 in
    Title2:     1983 to 1986 catch years
    Datatype:                                 - Obs-Est-Exp
    Time variable:                            - Year-Recovery
    Sort:                                     - PS-Prod-Hat-Spec-BY-Tag-RY-Gear-CR
    Release header report:                    - None
    Nontags:                                  - No
    Page break:                               - No
    Use totals?                               - Yes
    Use incomplete releases?                  - Yes
    TAGCODES RESTRICTED (   1):
      022222
    RECOVERY YEARS RESTRICTED (   4):
      1983  1984  1985  1986
  * REPORT-SET END
```

Figure 6.1 - Run description file (.LIS) example

```
-----------------------------------
3. Miscellaneous Messages/Warnings.
-----------------------------------
     * Check your "022222.LOG" file for warnings, error reports etc.

     * If you notice an ASTERISK "*" in the recovery report, it indicates a Bad Catch/Sample ratio.
       If a User Substitution Value was specified, it will be used for the ratio else the ratio will be set to 1.0.

     * The report will be in the following file(s):
       - Recovery report: 022222.REC

--------------------------------------
4a. CWT Release Master Data file pass.
--------------------------------------
     * CWT release master file has 12,434 tagged releases on file.
       - 1 different releases were selected.
       - 1 different sites were seen.
-------------------------
5. Report Creation Phase.
-------------------------
     Forcing CATCH REGION restrictions to the VALID (Un-Combined) regions.
     Forcing RECOVERY TYPES to the RANDOM types.
     Forcing CATCH/SAMPLE User substitution ratio to 1.0.
     Forcing SPORT AWARENESS User substitution value to 0.252.
```

Figure 6.1 - continued

There are several messages that can appear under the heading "5. Report creation Phase." (see figure above) that inform users of any "forced" restrictions or settings the program must do to maintain the integrity of the report. These messages are listed in the table below.

Table 6.1 - List of "Forced" restrictions/settings messages

Time variable settings:
Forcing RECOVERY YEAR restrictions to: 19**-**.
Too many RECOVERY YEARS selected, removing all years past the 12th year.
Forcing BROOD YEAR restrictions to: 19**-**.
Too many BROOD YEARS selected, removing all years past the 12th year.
Forcing RECOVERY WEEK restrictions to: 061-065, 071-075, 081-082.
Too many RECOVERY WEEKS selected, removing all weeks past the 12th week.
Forcing RECOVERY MONTH restrictions to: ***** to *****.
Forcing AGECLASS restrictions to: ***** to *****.

Data type - Recovery type tests:
Forcing RECOVERY TYPES to the RANDOM types.
Forcing RECOVERY TYPES to the TROLL and NET types.
Forcing Col. ** RECOVERY TYPES to the RANDOM types.

Time variable - Escapement tests:
Forcing RECOVERY TYPES to the non ESCAPEMENT types, due to MONTH set for the time variable.
Forcing RECOVERY TYPES to the non ESCAPEMENT types, due to WEEK set for the time variable.
Disallowing ESCAPEMENT recoveries, due to MONTH set for the time variable.
Disallowing ESCAPEMENT recoveries, due to WEEK set for the time variable.

Catch/Sample ratio and Sport Awareness substitution checks:
Forcing CATCH/SAMPLE User substitution ration to 1.0.
Forcing SPORT AWARENESS User substitution value to 0.252.
Forcing Col. **, CATCH/SAMPLE User ratio to ******, due to ROW setting.
Forcing Col. **, SPORT AWARENESS User value to ******, due to ROW setting.
Forcing Col. **, CATCH/SAMPLE User ratio to 1.0.
Forcing Col. **, SPORT AWARENESS User value to 0.252.

Recovered Length and Weight tests:
Forcing LENGTH CODE to "Fork length", due to RANGE restricted.
Forcing Col. **, LENGTH CODE to "Fork length", due to RANGE restricted.
Forcing WEIGHT CODE to "Round weight", due to RANGE restricted.
Forcing Col. **, WEIGHT CODE to "Round weight", due to RANGE restricted.

Table 6.1 - continued

```
Spread Sheet Maker - Row and Recovery type tests:
Forcing Col. **, Row: SUB-AREA RECOVERY TYPES to COMMERCIAL types.
Forcing Col. **, Row: GRADE RECOVERY TYPES to COMMERCIAL types.
Forcing Col. **, Row: SPORT-LOCATION RECOVERY TYPES to SPORT types.
Forcing Col. **, Row: AWARE-SPORT RECOVERY TYPES to SPORT types.
Forcing Col. **, Row: ESCAPE-SITE RECOVERY TYPES to ESCAPEMENT types.
Forcing Col. **, Row: REC-RUN-TYPE RECOVERY TYPES to ESCAPEMENT types.
Forcing Col. **, Row: SAMPLE-AGE RECOVERY TYPES to ESCAPEMENT types.
Forcing Col. **, Row: STAT-AREA RECOVERY TYPES to COMMERCIAL and SPORT types.
Forcing Col. **, Row: MONTH RECOVERY TYPES to COMMERCIAL and SPORT types.
Forcing Col. **, Row: WEEK RECOVERY TYPES to COMMERCIAL and SPORT types.
Forcing Col. **, Row: CATCH RECOVERY TYPES to COMMERCIAL RANDOM types.
Forcing Col. **, Row: SAMPLE RECOVERY TYPES to COMMERCIAL RANDOM types.
Forcing Col. **, Row: RATIO RECOVERY TYPES to COMMERCIAL RANDOM types.

Spread Sheet Maker - Row and Length, Weight, Age type tests:
Forcing Col. **, LENGTH CODE to "********", due to ROW = LENGTH.
Forcing Col. **, WEIGHT CODE to "********", due to ROW = WEIGHT.
Forcing Col. **, AGE TYPE to "********", due to ROW = AGE-CLASS.

Combined catch region check:
Forcing CATCH REGION restrictions to the VALID (Un-Combined) regions.
```

6.2. Run log file (.LOG)

This file uses the ".LOG" file extension. All report formats will produce this file.

When the report is run, a file is created to record any data calculation errors or warnings that occur during the run. If the report is aborted, the explanation can be found in this file. An example is provided in the figure below; it is associated with the Hatchery recovery report example in chapter 7.1.1.

```
MRPReporter run: 12-Feb-1988 at  2:13pm   (Friday   )  by: KUHN
          File: DISK$USER1:[KUHN.MRP.DEVELOP.DOC]:022222

  Any CATCH/SAMPLE error/warning messages in this run are not fatal errors.
They just point out invalid estimated recovery numbers in the report.

* ERROR * No Sport Estimate for this catch region,  29-FWSP
* ERROR * No Sport Estimate for this catch region,  29-FWSP
```

Figure 6.2 - Run log file (.LOG) example

There are several warning and error messages that can appear in the log file (see figure above) that identify problems encountered during the run. These messages are listed in the table below.

Table 6.2 - List of warning/error messages in a Run log file

```
* ERROR * Cat/Sam record read, CatReg: •••-••••••••, RecYear: ••
* ERROR * Catch or Sample zero, CR: •••, RY: ••, Spec: ••••, Period: ••
* ERROR * Catch < Sample, CR: •••, RY: ••, Spec: ••••, Period: ••
* ERROR * Sport Estimate problems, CR: •••, RY: ••, Spec: ••••, Period: ••
* ERROR * Sport Estimate < 1.0, CR: •••, RY: ••, Spec: ••••, Period: ••
* ERROR * No Sport Estimate for this catch region, •••-••••••••
* ERROR * Escapement Estimates record read, Site: •-••••, Run: •, RecYear: ••
* ERROR * Escapement age type lookup, Age Type: •
* ERROR * Escapement estimate calculation, Spec: ••••, AgeT: •, CR: •••, RY:••
```

6.3. Release or Header report file (.REL)

This file uses the ".REL" file extension. Not all report formats will produce this file. Reports that will optionally produce this file are the Hatchery, Biological, Catch Region, Summary recovery reports, and the Flat File builder. The Release report format will always create this file.

For the recovery reports and the Flat File builder format, this file is optional. If it is selected to be created, it will contain one line of release information for each tag code that was accepted for the recovery portion of the report run. The format of this file varies depending on the report being created.

6.4. Recovery report file (.REC)

This file uses the ".REC" file extension. Not all report formats will produce this file. Reports that will optionally produce this file are the Hatchery, Biological, Catch Region, Summary recovery reports, and the Flat File builder.

This file contains all of the recovery information for the tag codes selected for the report. The format of this file varies depending on the report being created.

6.5. Flat filer rollup recovery file (.ROL)

This file uses the ".ROL" file extension. This file is an optional format used only by the Flat File builder report. The contents of this file are described in section 8.4.

6.6. Flat filer table list file (.TAB)

This file uses the ".TAB" file extension. It is automatically created for the Flat File builder report. The contents and format of this file are described in section 8.5.

6.7. Spread sheet data file (.DAT)

This file uses the ".DAT" file extension. The output from the Spread Sheet Maker is stored in this file. The contents and format of this file are described in chapter 9.

Chapter 7 - REPORT FORMATS

Each of the standard report formats has a different purpose. This chapter describes what each format looks like.

Values in the reports that involve calculations are stored internally as floating point numbers and are "rounded up" only when they are printed.

At the top of each page of these reports are several descriptor lines. The top line contains the date, report name, and page number. If a title is entered, it is printed on the subsequent one to two lines (titles can have up to two lines). The next several header lines vary between report formats. They are described under the appropriate section below.

7.1. Hatchery recovery report

With several sort options and numerous rollup combinations available, this format has many different configurations.

7.1.1. The layout

A release description line is printed to reference the location and brood year of the release. The information found in this detail line varies depending on the TIME-VARIABLE, ROLLUPS, and SORT-ORDER options settings. The possible components of this release detail line are shown and described in the following table. These components are the same labels used for the SORT-ORDER and ROLLUPS option.

Table 7.1 - Release Detail line for the Hatchery recovery report

PS	- province/state of the hatchery
Prod	- production area of the hatchery
Hat	- hatchery code and name
Spec	- species name
BY	- brood year (dependent on the time variable)
Tag	- tag code
RY	- recovery year (dependent on the time variable)

The next header line lists the individual time variable values as well as naming the time variable. The recovery area identifier is printed on the extreme left part of this line.

Each recovery detail line prints a value for each time variable index and prints a cross total of these values under the heading "Total". A cross total is a total of each value in a report row.

The following example is a report created using these specifications:

TAGCODE = 022222
RECOVERY-YEAR = 1983,84,85,86
DATA-TYPE = Observed, Estimated, and Expanded
TIME-VARIABLE = Recovery year

Table 7.2 lists the commands entered to create the example shown in figure 7.1 below. Before attempting to create this example, users should see section 2.2 for a description of the command notation.

Table 7.2 - Commands for a "Hatchery recovery report" example

Step	Command(s)	Comment
1.	$ MRP Hat <Enter>	start the MRP-Reporter in the Report Setup menu for the Hatchery recovery report
*	<Enter>	if the "News" message appears, this removes it
2.	T Recoveries of tag code 022222 in <Enter> 1983 to 1986 catch years <PF1>	execute TITLE command and enter a two line title
3.	D S 7 \	execute DATA-TYPE command, SELECT-TYPE option, choose Obs-Est-Exp type
4.	R L 022222 <Enter> \	execute REPORT-SET command, LABEL option, and enter a label (optional)
5.	K	execute KEYWORDS command, displays keywords
a)	→ 3<Enter>s	choose TAGCODE, RESTRICT, ADD-TO-LIST
b)	022222 2<Enter>s \ \ \	enter code, accept it, backup to KEYWORDS menu
c)	\	backup to Report Setup menu
6.	F S 022222 <Enter> \	execute FILE command, SAVE option, enter file name and backup to top menu level
7.	E F 022222 <Enter>	execute EXECUTE command, FILENAME option, enter file name
	G <Enter> \	GO option - submits job to DAY-BATCH (default)
8.	Q Y	execute QUIT command, confirm with YES

```
18-May-1988 (Wednesday)          * H A T C H E R Y   R E C O V E R Y   R E P O R T *                Page # 0001
                                           Recoveries of tag code 022222 in
                                               1983 to 1986 catch years
                    * PS:BC, Prod:CCST, Hat:0146-KITIMAT RIVER       , Spec:CHIN, BY:81, Tag:022222       , *
Cat-Reg     (Year-Recovery)  1983   1984   1985   1986    Total
=================================================================================================
NCTR                Obs:        0      0      0      1        1
                    Est:        0      0      0      5        5
                    Exp:        0      0      0      8        8
NTR                 Obs:        0      4      3      4       11
                    Est:        0     20     13     17       50
                    Exp:        0     29     18     25       72
CN                  Obs:        5      0      1      0        6
                    Est:       20      0      2      0       22
                    Exp:       29      0      2      0       31
NN                  Obs:        1      0      2      0        3
                    Est:        5      0      9      0       14
                    Exp:        7      0     13      0       20
CSPT                Obs:        6      9      3      4       22
                    Est:       24*    36*    12*    16*      88
                    Exp:       34*    51*    17*    23*     125
NSPT                Obs:        0      1      0      0        1
                    Est:        0      4*     0      0        4
                    Exp:        0      6*     0      0        6
FWSP                Obs:        0      0      2      4        6
                    Est:        0      0      8*    16*      24
                    Exp:        0      0     11*    23*      34
** Tagcode (022222     ) TOTALS ** -------------------------------------------------------------------
  Troll             Obs:        0      4      3      5       12
                    Est:        0     20     13     23       56
                    Exp:        0     29     18     32       79
  Net               Obs:        6      0      3      0        9
                    Est:       25      0     11      0       36
                    Exp:       36      0     15      0       51
  Ocean Sport       Obs:        6     10      3      4       23
                    Est:       24     40     12     16       92
                    Exp:       34     57     17     23      131
  Fresh Sport       Obs:        0      0      2      4        6
                    Est:        0      0      8     16       24
                    Exp:        0      0     11     23       34
  * ALL GEARS       Obs:       12     14     11     13       50
                    Est:       49     60     43     54      206
                    Exp:       70     86     62     78      296
```

Figure 7.1 - A "Hatchery recovery report" example

7.1.2. Printing multiple data types

This format allows combinations of observed, estimated, and expanded recovery numbers to be printed. In the above example, all three data types were chosen. The DATA-TYPE option provides several alternative combinations.

7.1.3. How the TIME-VARIABLE option affects the output

Changing the time variable will alter the level of recovery detail that is printed. The release detail line is affected by certain time variable choices. Choosing Year-Recovery for the time variable in effect forces a rollup on recovery year. If Brood-Year is selected for the time variable, a rollup on brood year and tag code is imposed. Choosing Age-Class as the time variable will force a rollup on brood year, tag code, and recovery year.

7.1.4. How totalling works

There are several levels of sorting used, totals are printed for each level when a value change occurs for a given level. There are two exceptions; first, if only one value occurs at the sort level immediately below the level to print a total for, the total is not printed. Second, if a rollup is imposed on a sort level, no totals are printed for this level.

In the example given, a TAGCODE total was printed because the sort level immediately below (CATCH REGION), had multiple value changes. If only one catch region was found for the tag code, a total would not have been printed.

The total is broken into the different catch methods that were found in the lower detail. A further total is printed, summing up all of the catch methods in the total.

The USE-TOTALS option controls the printing of the totals. With this option the program prints no totals or just the totals without the detail.

7.1.5. How the ROLLUPS option controls the detail

To reduce the amount of detailed information in the report, a rollup facility is provided. This feature works in conjunction with the SORT-ORDER option, with rollups specified for levels in the sort order. For example, to force the report to print recovery gear detail for each hatchery selected, impose a rollup: on catch region, recovery year, brood year, and species.

7.1.6. Default Restrictions/Settings

When the report is submitted for execution, the program checks the user specified restrictions and settings for potential conflicts or problems. The program may need to apply other restrictions to the report for the report to be created correctly.

REGION-CATCH:

Catch regions are forced to the set of "un-combined" catch regions if the user does not restrict catch regions. Combined regions are regions where fishing vessels have fished across "real" catch region boundaries and could not report which fish were caught in which regions.

TIME-VARIABLE: Various restrictions are applied by the program depending on the selected time variable. A maximum of 12 time "slots" are allowed in a report. For requirements of more than 12 slots, break the report into smaller requests.

Year-Recovery: If no recovery years are chosen, the last 12 years are selected by the program. If more than 12 years are chosen, the program un-selects all years that are picked after the 12th year. For example, if the years 1972-87 are selected, the program uses 1972-83.

Brood-Year: See "Year-Recovery" above.

Week: If no recovery weeks are chosen, 12 weeks are selected by the program, starting with the 16th week (April). If more than 12 weeks are chosen, the program un-selects all weeks that are picked after the 12th week. For example, if the weeks 021-024,031-035,041-045 are selected, the program uses 021-024,031-035,041-043.

Month: If no recovery months are chosen, the program selects all 12 months.

Ageclass: If no age classes are chosen, the program selects ages one through eight.

DATA-TYPE/RECOVERY-TYPE:

Certain recovery types are not valid for the estimated and expanded data types, therefore if the data type is not observed recoveries only, the program ensures that only the "randomly sampled" recovery types are accepted (see Appendix C).

TIME-VARIABLE/ESCAPEMENT RECOVERIES:

If the time variable is chosen to be recovery Month or Week, the program disallows escapement recoveries to be accepted in the report (Escapement recoveries are not sampled monthly or weekly).

RECOVERY LENGTH:

If a length range is specified and a length type is not, the program sets the length type to Fork length.

RECOVERY WEIGHT:

If a weight range is specified and a weight type is not, the program sets the weight type to Round weight.

7.2. Catch Region recovery report

This report presents MRP data in an order opposite to the other report formats. Recovery detail is printed for hatcheries, stocks, or release sites and species for each catch region and recovery year combination. It is the most "compute intensive" report available. The release detail level site type is set with the ID-SITE option.

7.2.1. The layout

A recovery description line is printed to reference the location and year of recovery. The information found in this detail line varies depending on the TIME-VARIABLE, ROLLUPS, and SORT-ORDER option settings.

The next header line lists the individual time variable values as well as naming the time variable. The SITE detail indicator is named on the extreme left part of this line.

Each recovery detail line prints a value for each time variable index and prints a cross total of these values under the heading "Total".

The following example is a report created using these specifications:

SPECIES = Coho
CATCH-REGION = GSTR (Georgia Strait Troll)
BROOD-YEAR = 1983 and 84
RECOVERY-YEAR = 1986
MONTH = June through October
DATA-TYPE = Observed and Expanded
TIME-VARIABLE = Month

Table 7.3 lists the commands entered to create the example shown in figure 7.2 below. Before attempting to create this example, users should see section 2.2 for a description of the command notation.

Table 7.3 - Commands for a "Catch Region recovery report" example

Step	Command(s)	Comment
1.	$ MRP Cat <Enter>	start the MRP-Reporter in the Report Setup menu for the Catch Region recovery report
*	<Enter>	if the "News" message appears, this removes it
2.	K	execute KEYWORDS command, displays keywords
a)	2<Enter>s → → S <Enter> \	choose SPECIES, RESTRICT to Coho
b)	← 2<Enter>s ↓ ↓ → → S → <Enter> \	choose BROOD-YEAR, RESTRICT to 1983 and 84
c)	YEAR 2<Enter>s ↓ ↓ S <Enter>	choose YEAR-RECOVERY, RESTRICT to 1986
d)	→ <Enter> ← S <Enter> \	choose REGION-CATCH, RESTRICT to GSTR
e)	↓ ↓ 2<Enter>s ↓ ← S ↓ ← ← ↓ <Enter> \	choose MONTH, RESTRICT to Jun,Jul,Aug,Sep,Oct
f)	\	backup to Report Setup menu
3.	D S 5	execute DATA-TYPE command, SELECT Obs-Exp
4.	→ → <Enter> M \	execute MISC command, TIME-VARIABLE = month
5.	T Coho recoveries in Georgia Strait Troll fishery <Enter> for Brood year 1983/84 in Recovery year 1986 <PF1>	execute TITLE command, enter two line title
6.	F S example3 <Enter>	execute FILE command, SAVE, enter file name
7.	← ← ←	execute EXECUTE command
a)	F example3 <Enter>	choose FILENAME, enter name
b)	G <Enter>	choose GO, submits report job to DAY-BATCH
c)	\	backup to Report Setup menu
8.	Q Y	execute QUIT, confirm with YES

```
02-Jun-1988 (Thursday)              * C A T C H   R E G I O N   R E C O V E R Y   R E P O R T *              Page # 0001
                                          Coho recoveries in Georgia Strait Troll fishery
                                           for Brood year 1983/84 in Recovery year 1986
                                           * Catch-Region:GSTR, Recovery-Year:1986 *
HATCHERY    (Month          )     Jun     Jul     Aug     Sep     Oct   Total
=====================================================================================================================
0000-* UNKNOWN *  ,Coho,Obs:        6      38       6       8       2      60
                  ,     ,Exp:      39     183      30      21      10     283
0259-BARRIERE RIVE,Coho,Obs:        0       7       1       1       0       9
                  ,     ,Exp:       0      33       4       3       0      40
0100-BIG QUALICUM ,Coho,Obs:        1      17       1       2       0      21
                  ,     ,Exp:     269    2336     175     955       0    3735
0152-BIRKENHEAD RI,Coho,Obs:        1       2       0       1       0       4
                  ,     ,Exp:       4      10       0      24       0      38
0103-CAPILANO RIVE,Coho,Obs:       29      82      13       5       0     129
                  ,     ,Exp:     745    1909     536     331       0    3521
0154-CHEHALIS RIVE,Coho,Obs:       30     148      20       8       4     210
                  ,     ,Exp:    1154    4736     630     384     148    7052
0107-CHILLIWACK RI,Coho,Obs:       26     149      13      10       7     205
                  ,     ,Exp:    5022   20138    2066    2885    1075   31186
0039-COLL FISHERIE,Coho,Obs:        1       1       0       0       0       2
                  ,     ,Exp:       7       6       0       0       0      13
0156-EAGLE RIVER  ,Coho,Obs:        0       3       0       0       0       3
                  ,     ,Exp:       0      58       0       0       0      58
0532-GREEN RIVER/P,Coho,Obs:        1       0       0       0       0       1
                  ,     ,Exp:     123       0       0       0       0     123
0150-INCH CREEK   ,Coho,Obs:       22     131      10      10       3     176
                  ,     ,Exp:     322    1532     458     307      63    2682
0223-L.CAMPBELL RI,Coho,Obs:        5      40       6       4       2      57
                  ,     ,Exp:      28     200      71      32      10     341
0500-NOOKSACK RIVE,Coho,Obs:       15      51       5       3       1      75
                  ,     ,Exp:    2805    6666    1844     243     158   11716
1399-PUGET POWER  ,Coho,Obs:        0       2       0       0       0       2
                  ,     ,Exp:       0       9       0       0       0       9
0105-PUNTLEDGE RIV,Coho,Obs:       19     124       8      13      12     176
                  ,     ,Exp:     755    4181     308     593     398    6235
0534-PUYALLUP RIVE,Coho,Obs:        0       1       1       0       0       2
                  ,     ,Exp:       0      71     110       0       0     181
0106-QUINSAM RIVER,Coho,Obs:       23     210      11       7       4     255
                  ,     ,Exp:     504    4732     107     162     209    5714
0125-SECHELT COP  ,Coho,Obs:        4      10       0       0       0      14
                  ,     ,Exp:      23      39       0       0       0      62
```

Figure 7.2 - A "Catch Region recovery report" example

```
0511-SKAGIT RIVER ,Coho,Obs:     18     37      2      0      0     57
                ,     ,Exp:     220    704     19      0      0    943
0512-SKYKOMISH RIV,Coho,Obs:      1      3      1      0      0      5
                ,     ,Exp:      70    140     73      0      0    283
0124-SLIAMMON RIVE,Coho,Obs:     17     44      4      4      1     70
                ,     ,Exp:     101    209     19     11      5    345
1673-SQUAXIN I. PE,Coho,Obs:      0      2      1      0      0      3
                ,     ,Exp:       0    274     91      0      0    365
0552-SUQUAMISH PEN,Coho,Obs:      0      1      0      0      0      1
                ,     ,Exp:       0     29      0      0      0     29
0153-TENDERFOOT CR,Coho,Obs:     20     72 [illegible] [illegible] 0    104
                ,     ,Exp:     501   1342    134 [illegible]  0   2219
0049-VANCOUVER BAY,Coho,Obs:     11     24      1      0      0     36
                ,     ,Exp:      74    113      5      0      0    192
** RECOVERY-YEAR (1986) TOTALS ** -----------------------------------------------------------
                     * Obs:     250   1199    111     81     36   1677
                     * Exp:   12767  49653   6681   6196   2076  77373
```

Figure 7.2 - continued

7.2.2. Printing multiple data types

This format allows combinations of observed, estimated, and expanded recovery numbers to be printed. Two data types were chosen for the example in figure 7.2. The DATA-TYPE option provides several alternative combinations.

7.2.3. How the TIME-VARIABLE option affects the output

See section 7.1.3. for a description of this feature.

7.2.4. How totalling works

Totals are printed for each recovery year and catch region that is processed in the report (depending on the ROLLUPS and TIME-VARIABLE options).

The USE-TOTALS option controls the printing of the totals. This option directs the program to print no totals, or only the totals without the detail.

7.2.5. How the ROLLUPS option controls the detail

To reduce the amount of detailed information in the report, a rollup facility is provided. This feature works in conjunction with the SORT-ORDER option, with rollups specified for levels in the sort order. For example, to cause the report to print species detail for each catch region selected, impose a rollup on recovery year and site.

7.2.6. Default Restrictions/Settings

(see section 7.1.6)

7.3. Biological recovery report

This report selects only troll and net recovery types because biological length and weight information is reported. Currently, other recovery types do not have length and weight data available.

7.3.1. The layout

See section 7.1.1. for a presentation of the general layout.

The following example is a report created using these specifications:

TAGCODE = 022222
RECOVERY-YEAR = 1983,84,85,86
DATA-TYPE = Observed, Mean Length and Weight, Sample sizes
TIME-VARIABLE = Recovery year

Table 7.4 lists the commands entered to create the example shown in figure 7.3 below. Before attempting to create this example, users should see section 2.2 for a description of the command notation.

Table 7.4 - Commands for a "Biological recovery report" example

Step	Command(s)	Comment
1.	$ MRP Bio <Enter>	start the MRP-Reporter in the Report Setup menu for the Biological recovery report
*	<Enter>	if the "News" message appears, this removes it
2.	K	execute KEYWORDS command, display keywords
a)	→ 3<Enter>s 022222 2<Enter>s \ \ \	choose TAGCODE, RESTRICT, ADD-TO-LIST 022222
b)	YEAR 2<Enter>s ↓ → → → → → S → → <PF1> → ↓ S <Enter> \	choose YEAR-RECOVERY, RESTRICT 83,84,85,86
c)	\	backup to Report Setup menu
3.	T	execute TITLE command, enter two line title
	Recoveries of tag code 022222 in 1983 through 1986 catch years	<Enter> <PF1>
4.	F S example4 <Enter>	execute FILE, SAVE, enter file name
5.	← ← ←	execute EXECUTE command
a)	F example4	choose FILENAME, enter name
b)	G <Enter>	choose GO, submits report job to DAY-BATCH
c)	\	backup to Report Setup menu
6.	Q Y	execute QUIT, confirm with YES

```
02-Jun-1988 (Thursday)  * B I O L O G I C A L  O B S E R V E D  T A G  R E C O V E R Y  R E P O R T *          Page # 0001
                                                  Recoveries of tag code 022222 in
                                                   1983 through 1986 catch years
                       * PS:BC, Prod:CCST, Hat:0146-KITIMAT RIVER        , Spec:CHIN, BY:81, Tag:022222       , *
Cat-Reg     (Year-Recovery)   1983    1984    1985    1986   Total
=====================================================================================================================
NCTR                   Obs:      0       0       0       1       1
                  Mean Len:      0       0       0    1010    1010
                Sample Len:      0       0       0       1       1
NTR                    Obs:      0       4       3       4      11
                  Mean Len:      0     688     789     935     805
                Sample Len:      0       4       3       4      11
CN                     Obs:      5       0       1       0       6
                  Mean Len:    396       0     695       0     445
                Sample Len:      5       0       1       0       6
                  Mean Wgt:      0       0      51       0      51
                Sample Wgt:      0       0       1       0       1
NN                     Obs:      1       0       2       0       3
                  Mean Len:    415       0     876       0     722
                Sample Len:      1       0       2       0       3
** Tagcode (022222      ) TOTALS ** ---------------------------------------------------------------------------------
  Troll                Obs:      0       4       3       5      12
                  Mean Len:      0     688     789     950     822
                Sample Len:      0       4       3       5      12
  Net                  Obs:      6       0       3       0       9
                  Mean Len:    399       0     816       0     538
                Sample Len:      6       0       3       0       9
                  Mean Wgt:      0       0      51       0      51
                Sample Wgt:      0       0       1       0       1
  * ALL GEARS          Obs:      6       4       6       5      21
                  Mean Len:    399     688     802     950     700
                Sample Len:      6       4       6       5      21
                  Mean Wgt:      0       0      51       0      51
                Sample Wgt:      0       0       1       0       1
```

Figure 7.3 - A "Biological recovery report" example

7.3.2. Printing multiple data types

This format allows user-selectable combinations of up to ten different data types to be reported simultaneously. Not all of the data types selected for the report are printed for each recovery region. Color data is only available for chinook salmon, and is not reported for other species recoveries. The DATA-TYPE option provides the ability to select different combinations of the data types.

7.3.3. How the TIME-VARIABLE option affects the output

See section 7.1.3.

7.3.4. How totalling works

See section 7.1.4.

7.3.5. How the ROLLUPS option controls the detail

See section 7.1.5.

7.3.6. Default Restrictions/Settings

When the report is submitted for execution, the program checks the user specified restrictions and settings for potential conflicts or problems. The program may need to apply other restrictions to the report for the report to be created correctly.

REGION-CATCH:
(see section 7.1.6)

TIME-VARIABLE:
(see section 7.1.6)

RECOVERY-TYPE:
If the user does not restrict recovery type, the program selects the troll and net types. If the user restricts recovery type, the program will un-restrict non troll and net types.

7.4. Summary recovery report

The information printed in this report is organized in a summarized format.

7.4.1. The layout

A release description line is printed to reference the location and brood year of the release. All recovery years are added together, therefore the years that had recoveries for each release detail line are printed in the release detail line. The information found in this detail line varies depending on the ROLLUPS and SORT-ORDER option settings. The components of this line are described in a table found in section 7.1.1.

The next header line describes the data types used in this report. Eleven data types are printed horizontally in the report for each summary recovery region. The following table describes each of the field components in the detail print line:

Table 7.5 - Summary recovery report detail print line description

Fishery: [** Note: W/O/C = Washington/Oregon/California **]
This field defines the geographical resolution of a detail line. Including totals, this field has sixteen possible values:

B.C. Commercial , W/O/C Commercial
Alaska Commercial , B.C. Sport - Marine
B.C. Sport - Freshwater, W/O/C Sport
Alaska Sport , Total Commercial
Total Sport , Native Food Fishery
Escapement - rack , Escapement - fence
Escapement - deadpitch , Escapement - river
Escapement - brood , * Total all fisheries *

Observed:
This field contains the observed recovery count for the release, in the current fishery.

Estimated:
This field contains the estimated recovery count for the release, in the current fishery.

Proportion total Est.:
This field is the proportion of the total estimated; which is calculated using the estimated recovery count for the fishery divided by the total estimated recovery count for the tagcode.

Estimated per # tag:
This field is the estimated recoveries per number tagged for the tagcode. It is calculated using the estimated recovery count for the fishery divided by the number tagged in the release group. Since this calculation produces a small fraction, the number printed in the report is multiplied by 10,000.

Mean Length:
This field is calculated using the sum of the recorded length values observed for the tagcode in the fishery divided by the sample size (see below). The measurement units are millimetres (mm).

Sample Size:
This field is the number of observed records for the tagcode in the fishery, that have a length measurement.

Length Variance: The normal definition for "Variance" applies.

Mean Weight:
This field is calculated in the same manner as the "Mean Length" value.

Sample Size:
This field is the number of observed records, for the tagcode in the fishery, that have a weight measurement.

Red Flesh:
Chinook salmon recoveries have an associated flesh color indicator. This field is a count of the "Red" or "Mixed" color chinook.

White Flesh: Same rules apply as for "Red Flesh" above.

Figure 7.4 shows the summarizing that occurs for this report. Compare this example with the figure 7.1 to see the effect of using a more summarized format. Table 7.6 lists the commands necessary to set up the report in figure 7.4 by retrieving the report created in figure 7.1 and resubmitting the job for this format. The report in figure 7.1 must be created prior to the report in figure 7.4. Before attempting to create this example, users should see section 2.2 for a description of the command notation.

Table 7.6 - Commands for a "Summary recovery report" example

Step	Command(s)	Comment
1.	MRP Sum <Enter>	start the MRP-Reporter in the Report Setup menu for the Summary recovery report
*	<Enter>	if the "News" message appears, this removes it
2.	F R 2<Enter>s \	execute FILE command, RETRIEVE option, select the file 022222.MRP and backup up to top menu
3.	S 2<Enter>s \	*optional* execute SHOW command, CURRENT-REPORT-SET option, listing restricted keywords
4.	E F 022222-2 <Enter>	execute EXECUTE command, FILENAME option, enter file name
	G <Enter> \	GO option - submits job to DAY-BATCH (default)
5.	Q Y	execute QUIT command, confirm with YES

```
18-May-1988 (Wednesday)          * S U M M A R Y  T A G  R E C O V E R Y  R E P O R T *                     Page # 0001
                                                  Recoveries of tag code 022222 in
                                                      1983 to 1986 catch years
            * PS:BC, Prod:CCST, Hat:0146-KITIMAT RIVER      , Spec:CHIN, BY:81, Tag:022222     , RYs:1983,84,85,86 *
                                                 Proportion  Estimated   Mean   Sample    Length    Mean  Sample   Red White
Fishery                      Observed  Estimated  total Est.  per # tag Length     Size  Variance  Weight    Size Flesh Flesh
=========================================================================================================================
B.C. Commercial        :          21         91       44.3%         22    701       21     52354      51       1     8     7
B.C. Sport - Marine    :          23         91*      44.2%         22      0        0         0       0       0     0     0
B.C. Sport - Freshwater:           6         24*      11.5%          6      0        0         0       0       0     0     0
Total Commercial       :          21         91       44.3%         22    701       21     52354      51       1     8     7
Total Sport            :          29        115       55.7%         27      0        0         0       0       0     0     0
* Total all fisheries *:          50        206      100.0%         49    701       21     52354      51       1     8     7
```

Figure 7.4 - A "Summary recovery report" example

The "Fishery" detail information is separated into different recovery methods, different agencies (including U.S.A. agencies), and some sub-totals.

7.4.2. How totalling works

Totalling works the same as with the Hatchery report described in section 7.1.2.

In the example given, there is only one detail block, therefore a total is not necessary. Had there been two tag codes printed for the same brood year, a brood year total would have been triggered.

7.4.3. How the ROLLUPS option controls the detail

To reduce the amount of detailed information in the report, a rollup facility is provided. This feature works in conjunction with the SORT-ORDER option, with rollups specified for levels in the sort order. For example, to make the report print the fishery detail for each hatchery selected, impose a rollup on brood year and species.

7.4.4. Default Restrictions/Settings

When the report is submitted for execution, the program checks the user specified restrictions and settings for potential conflicts or problems. The program may apply other restrictions to the report for the report to be created correctly.

REGION-CATCH:
(see section 7.1.6)

RECOVERY-TYPE:
Certain recovery types are not valid for estimated data types. The program ensures that only the "randomly sampled" recovery types are accepted for this report because it calculates estimated recoveries (estimated recoveries are invalid for nonrandom samples).

7.5. Release report

This report should be used for data requests that only require MRP release information. It provides two different formats for presenting the data. One format prints one line of data for each tag code and the other format prints all release data fields for each tag code. There are rollup and totalling options available to control the amount of detail produced.

7.5.1. HEADER format layout

A release description line is printed to reference the location and brood year of the release. The information found in this line varies depending on the SORT-ORDER that was selected. See the table found in section 7.1.1 for a further description of the components of this print line.

The next few header lines name the fields that make up an individual detail print line. There is one detail information line printed for each tag code in the report. The following table describes each field in the detail print line.

Table 7.7 - Release Report detail print line description

Tag Code:
A code of up to twelve alpha-numeric characters identifying the tagged release group.

Stock site:
The site where the brood stock originated. The first four digits identifies the site number and the site name follows the "-" (dash).

Spec:
The first four characters of the species name identifier.

BY:
This field prints the last two digits of the brood year.

Number Tagged:
The number of fish that received this particular tag code and retained the tag code after being held for "Day Hld" days when they are checked for tag loss. This field is also corrected for mortality.

% Tag Loss:
The percentage of fish that shed their tags before they were released.

Day Hld:
This field is the number of days the release group was held after the day that they were tagged. After the holding period the fish are checked for tag loss.

Number Released:
The total number of fish released. This value includes fish that were tagged and fish that were not tagged.

% CWT mark:
This value is equal to the number of fish tagged divided by the total number released.

Weight (gm):
The average weight of the individual fish in the release group at the time of release.

Release date:
This is the date range of the actual release.

Release site:
The site where the release group was released. The first four digits identifies the site number and the site name follows the "-" (dash).

RT:
This field identifies the rearing type of the fish, whether it was reared in the wild or at a hatchery.

ST:
This field identifies the study type of the release.

For WILD releases, the program substitutes the release site number and name for the hatchery number and name. Wild releases are identified by a "W" in the "RI" field in the detail line.

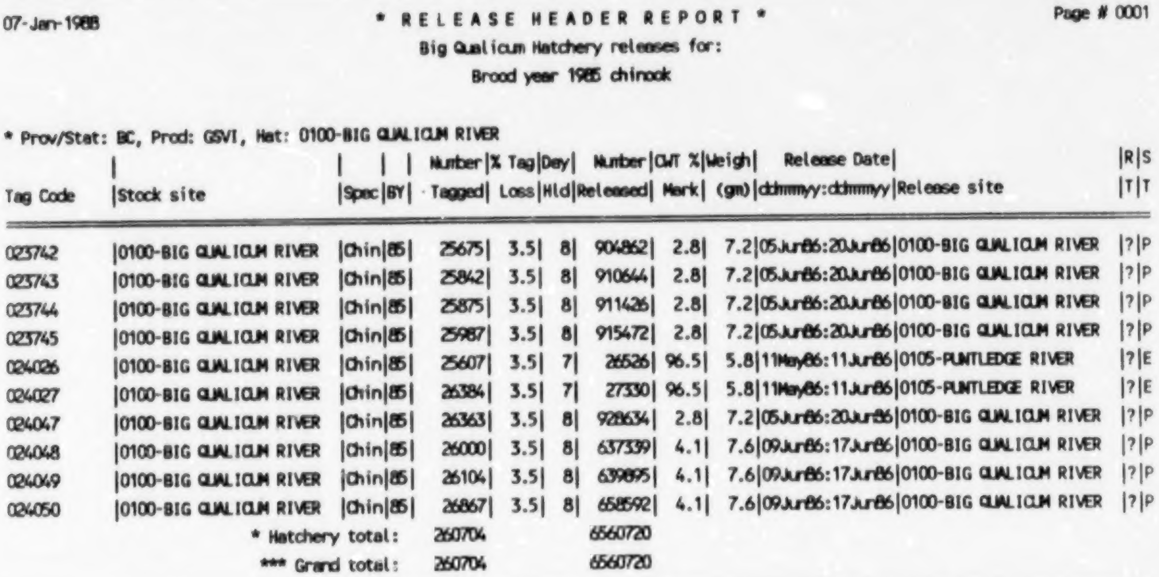
The following example is a report created using these specifications:

HATCHERY = Big Qualicum River (100)
SPECIES = Chinook
BROOD-YEAR = 1985

Table 7.8 lists the commands entered to create the example shown in figure 7.5 below. Before attempting to create this example, users should see section 2.2 for a description of the command notation.

Table 7.8 - Commands for a "Release HEADER report" example

Step	Command(s)	Comment
1.	$ MRP Rel <Enter>	start the MRP-Reporter in the Report Setup menu for the Release report
*	<Enter>	if the "News" message appears, this removes it
2.	K	execute KEYWORDS command, display keywords
a)	2<Enter>s → ↓ S <Enter> \	choose SPECIES, RESTRICT Chinook
b)	↓ 3<Enter>s Big Qualic 2<Enter>s \ \ \	choose HATCHERY, RESTRICT Big Qualicum River
c)	↑ ← 2<Enter>s ↓ ↓ → → → → S <Enter> \	choose BROOD-YEAR, RESTRICT 1985
d)	\	backup to Report Setup menu
3.	→ <Enter>	execute TITLE command, enter two line title
	Big Qualicum Hatchery releases for:	<Enter>
	Brood year 1985 chinook	<PF1>
4.	F S example5 <Enter>	execute FILE, SAVE, enter file name
5.	← ← ←	execute EXECUTE command
a)	F example5 <Enter>	choose FILENAME, enter name
b)	G <Enter>	choose GO, submits job to DAY-BATCH
c)	\	backup to Report Setup menu
6.	Q Y	execute QUIT, confirm with YES



```
07-Jan-1988                    * R E L E A S E   H E A D E R   R E P O R T *                                  Page # 0001
                                          Big Qualicum Hatchery releases for:
                                                Brood year 1985 chinook

* Prov/Stat: BC, Prod: GSVI, Hat: 0100-BIG QUALICUM RIVER
           |                        |    |  |  Number|% Tag|Day|  Number|CWT %|Weigh|   Release Date|                           |R|S
Tag Code   |Stock site              |Spec|BY| Tagged| Loss|Hld|Released| Mark| (gm)|ddmmmyy:ddmmmyy|Release site               |T|T
==============================================================================================================================
023742     |0100-BIG QUALICUM RIVER |Chin|85|  25675|  3.5|  8|  904862|  2.8|  7.2|05Jun86:20Jun86|0100-BIG QUALICUM RIVER  |?|P
023743     |0100-BIG QUALICUM RIVER |Chin|85|  25842|  3.5|  8|  910644|  2.8|  7.2|05Jun86:20Jun86|0100-BIG QUALICUM RIVER  |?|P
023744     |0100-BIG QUALICUM RIVER |Chin|85|  25875|  3.5|  8|  911426|  2.8|  7.2|05Jun86:20Jun86|0100-BIG QUALICUM RIVER  |?|P
023745     |0100-BIG QUALICUM RIVER |Chin|85|  25987|  3.5|  8|  915472|  2.8|  7.2|05Jun86:20Jun86|0100-BIG QUALICUM RIVER  |?|P
024026     |0100-BIG QUALICUM RIVER |Chin|85|  25607|  3.5|  7|   26526| 96.5|  5.8|11May86:11Jun86|0105-PUNTLEDGE RIVER     |?|E
024027     |0100-BIG QUALICUM RIVER |Chin|85|  26384|  3.5|  7|   27330| 96.5|  5.8|11May86:11Jun86|0105-PUNTLEDGE RIVER     |?|E
024047     |0100-BIG QUALICUM RIVER |Chin|85|  26363|  3.5|  8|  928634|  2.8|  7.2|05Jun86:20Jun86|0100-BIG QUALICUM RIVER  |?|P
024048     |0100-BIG QUALICUM RIVER |Chin|85|  26000|  3.5|  8|  637339|  4.1|  7.6|09Jun86:17Jun86|0100-BIG QUALICUM RIVER  |?|P
024049     |0100-BIG QUALICUM RIVER |Chin|85|  26104|  3.5|  8|  639895|  4.1|  7.6|09Jun86:17Jun86|0100-BIG QUALICUM RIVER  |?|P
024050     |0100-BIG QUALICUM RIVER |Chin|85|  26867|  3.5|  8|  658592|  4.1|  7.6|09Jun86:17Jun86|0100-BIG QUALICUM RIVER  |?|P
                       * Hatchery total:  260704             6560720
                       *** Grand total:   260704             6560720
```

Figure 7.5 - A "Release HEADER report" example

7.5.2. DUMP format layout

This report format prints all release data fields for each tag code that appears in the report. Four lines of release information comprise a detail print line.

The following example is a report created using these specifications:

HATCHERY = Big Qualicum River (100)
SPECIES = Chinook
BROOD-YEAR = 1985

Table 7.9 lists the commands entered to create the example shown in figure 7.6 below. Before attempting to create this example, users should see section 2.2 for a description of the command notation.

Table 7.9 - Commands for a "Release DUMP report" example

Step	Command(s)	Comment
1.	$ MRP Rel <Enter>	start the MRP-Reporter in the Report Setup menu for the Release report
*	<Enter>	if the "News" message appears, this removes it
2.	K	execute KEYWORDS command, display keywords
a)	→ 3<Enter>s 023742,023743,023744,024050 2<Enters> \ \ \	execute TAGCODE command, RESTRICT, ADD-TO-LIST
b)	\	backup to Report Setup menu
3.	T	execute TITLE command, enter two lines
	Information for tagcodes:	<Enter>
	023742, 023743, 023744, 024050	<PF1>
4.	M R D	execute MISC command, REPORT-TYPE Dump
5.	→ → S example6 <Enter>	execute FILE, SAVE, enter file name
6.	← ← ←	execute EXECUTE command
a)	F example6 <Enter>	choose FILENAME, enter name
b)	G <Enter>	choose GO, submits report to DAY-BATCH
c)	\	backup to Report Setup menu
7.	Q Y	execute QUIT, confirm with YES

```
07-Jan-1988                    * R E L E A S E  D U M P  R E P O R T *                    Page # 0001
                                      Information for tagcodes:
                                  023742, 023743, 023744, 024050

023742     |Chinook|BY:85|Hat:0100-BIG QUALICUM RIVER  |GSVI|Rel:0100-BIG QUALICUM RIVER  |GSVI|Stk:0100-BIG QUALICUM RIVER  |GSVI
           |PS:BC|Stud:P|Rear:?|StkT:?|RelDate:05Jun86-20Jun86|ExpID:????|Coord:03|Stage:SMC |Run:3|Replicates:000|Daysheld:  8
           |Weight(gm):  7.2|Length(mm): Unk|Method:?|Program:???|Tagged:   25675|ADOnly:      933|UnClip:  878254|Total:  904862
           |TagLoss:  3.5|ExpSurv:?-Unk  |Comment:

023743     |Chinook|BY:85|Hat:0100-BIG QUALICUM RIVER  |GSVI|Rel:0100-BIG QUALICUM RIVER  |GSVI|Stk:0100-BIG QUALICUM RIVER  |GSVI
           |PS:BC|Stud:P|Rear:?|StkT:?|RelDate:05Jun86-20Jun86|ExpID:????|Coord:03|Stage:SMC |Run:3|Replicates:000|Daysheld:  8
           |Weight(gm):  7.2|Length(mm): Unk|Method:?|Program:???|Tagged:   25842|ADOnly:      936|UnClip:  883866|Total:  910644
           |TagLoss:  3.5|ExpSurv:?-Unk  |Comment:

023744     |Chinook|BY:85|Hat:0100-BIG QUALICUM RIVER  |GSVI|Rel:0100-BIG QUALICUM RIVER  |GSVI|Stk:0100-BIG QUALICUM RIVER  |GSVI
           |PS:BC|Stud:P|Rear:?|StkT:?|RelDate:05Jun86-20Jun86|ExpID:????|Coord:03|Stage:SMC |Run:3|Replicates:000|Daysheld:  8
           |Weight(gm):  7.2|Length(mm): Unk|Method:?|Program:???|Tagged:   25875|ADOnly:      926|UnClip:  884625|Total:  911426
           |TagLoss:  3.5|ExpSurv:?-Unk  |Comment:

024050     |Chinook|BY:85|Hat:0100-BIG QUALICUM RIVER  |GSVI|Rel:0100-BIG QUALICUM RIVER  |GSVI|Stk:0100-BIG QUALICUM RIVER  |GSVI
           |PS:BC|Stud:P|Rear:?|StkT:?|RelDate:09Jun86-17Jun86|ExpID:????|Coord:03|Stage:SMC |Run:3|Replicates:000|Daysheld:  8
           |Weight(gm):  7.6|Length(mm): Unk|Method:?|Program:???|Tagged:   26867|ADOnly:      961|UnClip:  630764|Total:  658592
           |TagLoss:  3.5|ExpSurv:?-Unk  |Comment:MUNDIE'S
                                                  * Hatchery total:   104259|         3756|      3277509|      3385524
                                                *** Grand total:      104259|         3756|      3277509|      3385524
```

Figure 7.6 - A "Release DUMP report" example

7.5.3. How totalling works

In the HEADER format, totals are printed for the Number Released and Number Tagged fields. In the DUMP format, totals are also printed for the Number Adipose Clip Only and Number Un-Clipped data fields.

Totals are printed for tag code groups for each hatchery. When the hatchery site changes, a total line is printed for the previous hatchery. The USE-TOTALS option controls the printing of the totals. This option will provide no totals or just the totals without the detail.

Chapter 8 - FLAT FILE BUILDER

To provide a facility for extracting a sub-set of data from the MRP database, the Flat File builder module is available. This program allows the user to impose restrictions on data fields in the same manner as the standard reports. A user can create text files that contain all the data fields in the database as a user specified sub-set.

8.1. General description

There are three possible file formats available: a release, recovery, and rollup format. The release format contains the detailed release data for each tag code that is selected. The recovery format contains the detailed recovery data for each tag code that is selected, respecting any recovery restrictions that are specified by the user. The rollup format is a summary recovery format, where the recovery data is summarized using a time-area stratification.

A file containing several tables is also created, based on the information selected during the flat file run. These tables provide site names, statistical area/sub area descriptions, and sport location names for the coded fields in the data records that are selected.

8.2. Release file format

For the release file, every release data field is extracted from the database for each record selected. This file is essentially a mini MRP release database created from user specified restrictions. Each record in the file represents a tagged release group.

Figure 8.1 numbers and names each data field in the record, with the starting column position and the FORTRAN data format of the field. The format "A" followed by a number n, represents an alpha-numeric data type consisting of n column positions. The format "I" followed by a number n, represents an integer data type consisting of n digits (column positions). The format "F" followed by a number n.m, represents a floating point data type consisting of n digits including the decimal point with m decimal places.

Field Name	Column	Format
01. Tag code	001	A12
02. Species HART code	013	I3
03. Brood year	016	I2
04. Run type code	018	I1
05. Day first released	019	I2
06. Month first released	021	I2
07. Year first released	023	I2
08. Day last released	025	I2
09. Month last released	027	I2
10. Year last released	029	I2
11. Number tagged	031	I8
12. Adipose clip only	039	I8
13. Unclipped	047	I8
14. Total released	055	I8
15. Number of days held	063	I3
16. Length (mm)	066	I4
17. Weight (grams/fish)	070	F6.1
18. Percentage tag loss	076	F4.1
19. Expected survival	080	F5.1
20. Stage code	085	A4
21. Study type code	089	A1
22. Rearing type code	090	A1
23. Stock type code	091	A1
24. Experiment Identification code	092	A4
25. Method of release	096	A1
26. Survival flag	097	A1
27. Program type	098	A3
28. Highest Replicate code	101	I2
29. Hatchery number	103	I4
30. Release site number	107	I4
31. Stock site number	111	I4
32. Agency code	115	A4
33. Co-ordinator code	119	I2
34. Production area code	121	A4
35. Province/State code	125	A2
36. Years with recoveries	127	10I2
37. Release type	147	A1
38. Total associated release	148	I8

Figure 8.1 - FLAT FILE BUILDER: Release file format

Other release file format details are:

Record length = 155 bytes.

An example FORTRAN read:

```
      Read( Unit,10 ) field1, field2, field3, . . ., field38
10    Format( A12,I3,I2,I1,6I2,4I8,I3,I4,F6.1,F4.1,F5.1,A4,3A1,A4,2A1,A3,I2,
     1        3I4,A4,I2,A4,A2,10I2,A1,I8 )
```

8.3. Recovery file format

The recovery file contains every data field associated with an observed commercial, sport tag recovery, and escapement recovery (escapement recoveries are "bulk" recoveries where an observed count is recorded for a tag code instead of individual observed recovery records). In addition to observed recovery data fields, sampling and summary data fields are appended to the end of the recovery record (fields 29-38 in the figure below). Not all of the fields are valid for all recovery methods. The non-valid fields are stored as blank characters in the record.

Figure 8.2 lists the numbers and names of each recovery field (see section 8.2 for a description of the figure). The column labeled "Gear" lists the recovery methods for which the data field is valid:

T = commercial troll
N = commercial net
S = sport
E = escapement

Field Name	Column	Gear	Format
01. Tag code	001	TNSE	A12
02. Replicate number	013	TNSE	I2
03. Recovery year	015	TNSE	I2
04. Gear	017	TNSE	I2
05. Catch region	019	TNSE	I3
06. Brood year	022	TNSE	I2
07. Recovery type	024	TNSE	A1
08. Non-tag indicator	025	TNSE	A1
09. Species HART code	026	TNSE	I3
10. Statistical week	029	TNS	I3
11. Statistical area	032	TNS	A3
12. Grade	035	TN	A1
13. Colour	036	TN	I1
14. Length code	037	TN	I1
15. Length (mm)	038	TN	I4
16. Weight code	042	TN	I1
17. Weight (kg)	043	TN	F5.1
18. Sexual maturity	048	TNE	I2
19. Sub-area code	050	TN	I3
20. Sample location	053	TN	A4
21. Delivery method	057	TN	A1
22. Scale age	058	TNE	I1
23. Sport location code	059	S	A7
24. Recovery site code	066	E	A1
25. Recovery site number	067	E	I4
26. Run type	071	E	I2
27. Sample age type	073	E	A1
28. Number of observed recoveries	075	TNSE	I5
29. Catch or escapement	079	TNSE	I6
30. Sample size	085	TNSE	I6
31. Number of known tags	091	TNSE	I5
32. Number of no-pins	096	TNSE	I5
33. Number of lost-pins	101	TNS	I5
34. Number with no data	106	TNS	I5
35. Number sport marks in sample	111	S	I5
36. Estimated marks in the est. sport catch	116	S	I5
37. Number observed sport recoveries	121	S	I5
38. Sum of escapement non-tags	126	E	I5

Figure 8.2 - FLAT FILE BUILDER: Recovery file format

Other recovery file format details are:

Record length = 130 bytes.

Field usage by recovery method:

```
Commercial (TN)  : 1-22,28-34
Sport      (S)   : 1-11,23,28-37
Escapement (E)   : 1-9,18,22,24-32,34,38
```

An example FORTRAN read:

```
      Read( Unit,10 ) field1, field2, field3, . . ., field38
10    Format( A12,3I2,I3,I2,2A1,2I3,A3,A1,2I1,I4,I1,F5.1,I2,I3,A4,A1,
     1        I1,A7,A1,I4,I2,A1,I5,2I6,8I5 )
```

8.4. Rollup file format

The rollup file contains some fields common to the recovery file and some other fields created from fields in the recovery file. This file is stratified left to right by the following five data fields from the recovery record:

Tagcode + Recovery year + Month and Week + Species + Catch region

A record represents the processing of several observed recovery records for commercial and sport recoveries. For escapement recovery records a rollup record is created from the common fields in a recovery record since an escapement recovery is already a "rolled up" recovery.

Figure 8.3 lists the numbers and names of the rollup fields (see section 8.2 for a description of the figure).

Field Name	Column	Format
01. Tag code	001	A12
02. Replicate number	013	I2
03. Recovery year	015	I2
04. Gear	017	I2
05. Catch region	019	I3
06. Brood year	022	I2
07. Non-tag indicator	024	A1
08. Species HART code	025	I3
09. Statistical week	028	I3
10. Average fork length (mm)	031	I4
11. Average hyperal length (mm)	035	I4
12. Average total length (mm)	039	I4
13. Average dress weight (kg)	043	F5.1
14. Average round weight (kg)	048	F5.1
15. % immature female (implied decimal)	053	I4
16. % mature female (implied decimal)	057	I4
17. % immature male (implied decimal)	061	I4
18. % mature male (implied decimal)	065	I4
19. % Unk sexual maturity (implied decimal)	069	I4
20. Recovery site code	073	A1
21. Recovery site number	074	I4
22. Run type	078	I2
23. Sample age type	080	A1
24. Number of observed recoveries	081	I5
25. Catch or escapement	086	I6
26. Sample size	092	I6
27. Number of known tags	098	I5
28. Number of no-pins	103	I5
29. Number of lost-pins	108	I5
30. Number with no data	113	I5
31. Number sport marks in sample	118	I5
32. Estimated marks in the est. sport catch	123	I5
33. Number observed sport recoveries	128	I5
34. Sum of escapement non-tags	133	I5

Figure 8.3 - FLAT FILE BUILDER: Rollup file format

Other rollup file format details are:

Total record length = 137 bytes.

An example FORTRAN read:

```
      Read( Unit,10 ) field1, field2, field3, . . ., field34
10    Format(A12,3I2,I3,I2,A1,2I3,3I4,2F5.1,5I4,A1,I4,I2,A1,I5,2I6,8I5)
```

8.5. Tables file description

There are three different tables (SITES, SPORT LOCATIONS, and STATISTICAL AREAS) that are automatically created from some of the coded fields in the release and recovery records. These tables list the codes along with the associated name and any other pertinent information. In figure 8.4 the actual codes and names are removed to make the example more general.

```
* SITES TABLE *

Site   Name                   | ProdArea | Prov/Stat
----   --------------------     --------   ---------


* SPORT LOCATION TABLE *

Code      Name                   | Stat | Lat. Long
-------   --------------------     ----   ----------------


* STATISTICAL AREA TABLE *

CR  | Stat | Sub | Name / Description
--    ----   ---   -------------------------------------------------------------
```

Figure 8.4 - FLAT FILE BUILDER: Tables file example

8.6. Default Restrictions/Settings

When the report is submitted for execution, the program checks user specified restrictions and settings for potential conflicts or problems. The program may need to apply other restrictions to the report for the report to be created correctly.

REGION-CATCH:
(see section 7.1.6)

RECOVERY LENGTH:
(see section 7.1.6)

RECOVERY WEIGHT:
(see section 7.1.6)

Chapter 9 - SPREAD SHEET MAKER

This program produces a file consisting of rows and columns of summarized MRP data including headings for each column.

9.1. Purpose

The purpose of this report format is to satisfy the requirement for customized adhoc MRP data requests. Very flexible data tables can be created using this format. The data tables created by this program can be directly imported into commercially available spreadsheet programs where graphic output is easily produced (see section 10.6).

9.2. Description

The general definition of a spreadsheet is a file consisting of rows and columns of any type of data. The MRP Spread Sheet Maker creates a spreadsheet file using data from the MRP database. The main difference between the spreadsheet created by MRP and a typical spreadsheet is that the first 1 to 3 (depends on number of ROW levels) physical column(s) represents the ROW level(s) used to create the spreadsheet (see section 9.2.1) and is referred to as the ROW descriptor or variable. The "real" columns of data are positioned in the remaining columns.

The user must define the characteristics of the data to be stored in the spreadsheet. This process involves specifying various restrictions for the entire spreadsheet (global restrictions) as well as any restrictions that are specific to individual columns. Along with restrictions, data types are specified for the columns.

9.2.1. The ROW

The ROW is a variable that consists of up to three parts. Each of the three parts represents a sorting/totalling level for each column in the spreadsheet. A level is defined by associating a KEYWORD with a ROW level. For example, a ROW variable could have two levels, TAGCODE and YEAR-RECOVERY, where TAGCODE is the first level and YEAR-RECOVERY is the second level. See section 9.4 for an example.

The user should know how much detail a particular keyword will produce when used as a row level. For example, the TAGCODE keyword as the first row level will list every tagcode accepted in the report. If YEAR-RECOVERY is chosen for a second row level with TAGCODE as the first level, then all recovery years accepted for each tagcode is printed in the table. Furthermore the corresponding columns will be accumulated with respect to these row levels.

Not all row level combinations of keywords make sense. Appendix C section 2, shows that not all recovery keywords are valid for all recovery methods. Choosing incompatible keywords for row levels, can produce a meaningless spreadsheet or in some cases an empty spreadsheet.

The MRP Spread Sheet Maker has the capacity for up to 10,000 rows and 23 columns in a spreadsheet.

9.2.2. Columns

An MRP spreadsheet can contain up to 20 data columns (not including the row descriptor). The data that is stored in each cell is determined by the selected DATA-TYPE for the column. For example if OBSERVED RECOVERIES is the data type for a column, then all cells in the column contain an observed recovery count for each row variable level.

Each column can have a different set of restrictions and settings assigned to it. This feature allows very flexible spreadsheet output to be produced. For example, each column can differ by YEAR-RECOVERY or SPECIES or HATCHERY or DATA-TYPE or several different restrictions etc.

The first row in the spreadsheet contains the column headers. Each header is enclosed in double quote characters so other spreadsheet or statistical analysis programs can easily import the MRP spreadsheet including the headers. These headers are the column labels that are entered during the spreadsheet setup phase (see section 5.3.6.5).

9.2.3. Data types

A data type, selected by the user, is assigned to each column in the spreadsheet. All cells for a column share the same data type. If desired all columns can also share the same data type. The data type defines the nature of the data stored in each spreadsheet cell. For a list and a description of the data types available, see section 5.3.8.3.

9.2.4. Global restrictions/settings

If restrictions and settings that are common to all columns have to be imposed on each column separately, setting up even a simple spreadsheet is tedious. For this reason global restrictions and settings may be imposed once and apply to all columns simultaneously (see section 5.3.7).

For a column to override a particular global restriction, restrict the keyword locally to the column. For example if the HATCHERY keyword is globally restricted to "BIG QUALICUM", and column number 3 has the HATCHERY keyword locally restricted to "LITTLE QUALICUM", then column number 3 is not restricted to Big Qualicum hatchery.

When a miscellaneous spreadsheet setting such as DATA-TYPE is globally set, it will override all column settings of DATA-TYPE. To have a different data type for each column, make sure that DATA-TYPE is not restricted globally. The miscellaneous settings that qualify for this feature are:

DATA-TYPE, FILE-FOR-RELEASES, NON-TAGS, USE-INCOMPLETES,
ADJUST-RECOVERIES, WEIGHT-CODE, LENGTH-CODE, AGE-TYPE

9.3. Default Restrictions/Settings

When the report is submitted for execution, the program checks the user specified restrictions and settings for potential conflicts or problems. The program may need to apply other restrictions to the report for the report to be created correctly.

Any "forced" keyword restrictions are applied to individual columns that do not have that particular keyword restricted. Restriction "corrections", are imposed on a column by column basis.

REGION-CATCH:
(see section 7.1.6)

RECOVERY-TYPE:
Certain recovery types are not valid for estimated data types. The program ensures that only the "randomly sampled" recovery types are accepted for columns that report estimated or expanded recoveries.

RECOVERY LENGTH:
(see section 7.1.6)

RECOVERY WEIGHT:
(see section 7.1.6)

ROW and RECOVERY-TYPE CONFLICTS:

Not all recovery methods (types) apply to all keywords. The program examines the row levels and either modifies the RECOVERY-TYPE restrictions or if RECOVERY-TYPE is not restricted, forces RECOVERY-TYPE to the applicable recovery methods. Listed below are keywords with a list of valid recovery methods. Users should refer to appendix C for a description of the recovery type codes.

SUB-AREA, GRADE:
blank, 0-9, D, L, T, H, F, S

SPORT-LOCATION, AWARE-SPORT:
Z

ESCAPE-SITE, REC-RUN-TYPE, SAMPLE-AGE:
R, S

STAT-AREA, MONTH, WEEK:
blank, 0-9, D, L, Z, T, H, F, S

CATCH, SAMPLE, RATIO:
blank, 0-9, D, L

LENGTH as a ROW level:

Use the Fork length measurement code or, if the first column has the length code restricted, use that code, forcing all columns to be restricted to the same code.

WEIGHT as a ROW level:

Use the Round weight measurement code or, if the first column has the weight code restricted, use that code, forcing all columns to be restricted to the same code.

AGE-CLASS as a ROW level:

Use the Total Age type or, if the first column has the Age Type restricted, use that type, forcing all columns to be restricted to the same code.

9.4. Example spreadsheet

Users should see section 2.2 for a description of the command notation used in table 9.1. This example was created using the following restrictions:

» SPECIES = Chinook
» HATCHERY = 100,102,103,104,105,106
» BROOD-YEAR = 1980-83
» YEAR-RECOVERY = 1983-86
» ROW variable = HATCHERY and BROOD-YEAR
» COLUMNS = (1) Tagged, (2) Released, (3) Observed, (4) Expanded

Table 9.1 - Commands for a "Spread Sheet Maker" example

Step	Command(s)	Comment
1.	$ MRP Spread <Enter>	start the MRP-Reporter in the Report Setup menu for the Spread Sheet Maker
*	<Enter>	if the "News" message appears, this removes it
2.	R 2<Enter>s	execute ROW command, choose 1st-Level, choose SELECT (displays keywords menu)
a)	↓ <Enter>	choose HATCHERY for 1st-Level
b)	↓ 2<Enter>s ← ← ↑ <Enter> \	choose BROOD-YEAR for 2nd-Level and back up to Report Setup menu
3.	→ 2<Enter>s 0 <Enter> \	execute COLUMN command, choose CHANGE-TO, enter 0 for column to setup GLOBAL settings
4.	K	execute KEYWORDS command, enter KEYWORDS menu
a)	2<Enter>s → ↓ S <Enter> \	choose SPECIES = Chinook backup to KEYWORDS menu
b)	↓ 3<Enter>s 100:106 2<Enter>s \ \ \	choose HATCHERY = 100,102,103,104,105,106 backup to KEYWORDS menu
c)	BR 2<Enter>s ↓ ← S <PF1> → ↓ S → → <Enter> \	choose BROOD-YEAR = 80,81,82,83 backup to KEYWORDS menu
d)	YEAR 2<Enter>s ↓ → → → → → S → → <PF1> → ↓ S <Enter> \ \	choose YEAR-RECOVERY = 83,84,85,86 backup to Report Setup menu
5.	C 2<Enter>s ↑ <Enter> Tagged <Enter>	execute COLUMN command, choose CHANGE-TO, choose column 1, choose LABEL, enter Tagged
6.	→ <Enter> B	execute DATA-TYPE command, SELECT Total tagged
7.	← ↓ 2<Enter>s ↑ <Enter> Released <Enter>	execute COLUMN command, choose CHANGE-TO, choose column 2, choose LABEL, enter Released
8.	→ <Enter> A	execute DATA-TYPE command, SELECT Total release
9.	← ↓ 2<Enter>s ↑ <Enter> Observed <Enter>	execute COLUMN command, choose CHANGE-TO, choose column 3, choose LABEL, enter Observed
10.	→ 2<Enter>s	execute DATA-TYPE command, SELECT Observed
11.	← ↓ 2<Enter>s ↑ <Enter> Expanded <Enter>	execute COLUMN command, SELECT CHANGE-TO, choose column 4, choose LABEL, enter Expanded
12.	→ <Enter> ↓ ↓ <Enter> \	execute DATA-TYPE command, SELECT Expanded

Table 9.1 - continued

Step	Command(s)	Comment
13.	F S Test <Enter> \	execute FILE, SAVE, enter file name etc.
14.	← ← ← <Enter>	execute EXECUTE command
a)	↑ 2<Enter>s	choose DAY-BATCH device
b)	↑ <Enter> Test1 <Enter>	choose FILENAME, enter name
c)	G <Enter>	choose GO, submits report job to 'device'
d)	\	backup to Report Setup menu
15.	Q Y	execute QUIT, confirm with YES

Figure 9.1 shows the output created by executing the commands listed in table 9.1. The ROW variable has two levels defined: HATCHERY and BROOD-YEAR. The hatchery name is repeated for each consecutive brood year. Four columns are defined in the example and printed in columns three through six in the spreadsheet output.

```
"     HATCHERY         ""BROOD-YEAR""Tagged""Released""Observed""Expanded"
"BIG QUALICUM RIVER" 1980         121085   4335402         94      6632
"BIG QUALICUM RIVER" 1981         102173   3446828        278     27131
"BIG QUALICUM RIVER" 1982          77057   2783940        349     29216
"BIG QUALICUM RIVER" 1983         199439   3160882        469     18874
"CAPILANO RIVER    " 1980         435797   1325786       1237     12000
"CAPILANO RIVER    " 1981         125197    992996        712     15965
"CAPILANO RIVER    " 1982         258507    797821        161      1509
"CAPILANO RIVER    " 1983         354026   1611857        200      3246
"LITTLE QUALICUM R " 1980          97167   1178257         83      2532
"LITTLE QUALICUM R " 1981          81112   1411157        372     15536
"LITTLE QUALICUM R " 1982          74019   1201723        653     26392
"LITTLE QUALICUM R " 1983          78755   1249229        198      9234
"PUNTLEDGE RIVER   " 1980         202610   1079652        387      5235
"PUNTLEDGE RIVER   " 1981         134435    306889        257      1167
"PUNTLEDGE RIVER   " 1982         132084   1568365        151      2843
"PUNTLEDGE RIVER   " 1983         157763    738793         99      1364
"QUINSAM RIVER     " 1980         156121   1136778        489      5848
"QUINSAM RIVER     " 1981         415741    765464       2203      7515
"QUINSAM RIVER     " 1982         566368   1093278       1246      6023
"QUINSAM RIVER     " 1983         225726   1435145        210      5564
"ROBERTSON CREEK   " 1980         206942   9162203        461     69512
"ROBERTSON CREEK   " 1981         141624   7858989        257     42192
"ROBERTSON CREEK   " 1982         236238   8526213        197     20662
"ROBERTSON CREEK   " 1983         298763   8177863         11       861
```

Figure 9.1 - SPREAD SHEET MAKER example

Chapter 10 - OTHER UTILITIES

The MRP-Reporter program is an interface to other data extraction programs. These programs are beyond the scope of this document and hence will not be described in detail.

10.1. SPECIAL REPORT PROGRAMS

Several specialized summary report programs have been developed and access to these is provided through the menu item "Special Report Programs" found in the System Access menu of the MRP-Reporter program.

When this menu item is selected, the MRP-Reporter program presents a pop up menu listing the special reports that are available:

```
               SPECIAL REPORT PROGRAMS
1. Total releases by PROD,HAT,BY,RELYR
2. Expanded recoveries by PROD,HAT,BY,RELYR
3. Hatchery production by AGE for a RECYR
4. Recoveries by PROD, CR, and 8 RECYRS
5. Exploitation, Survival by CR,BY for HAT RECS
6. Recoveries by PROD, STATWEEK fur USA & CAN
7. Site releases by CR,BY for 8 RECYRS

Q. QUIT to MRP Access Menu
```

10.2. QUERY/DUMP PROGRAMS

Several specialized interactive query and raw data dumping programs have been developed and access to these is provided through the menu item "Query/Dump Programs" found in the System Access menu of the MRP-Reporter program.

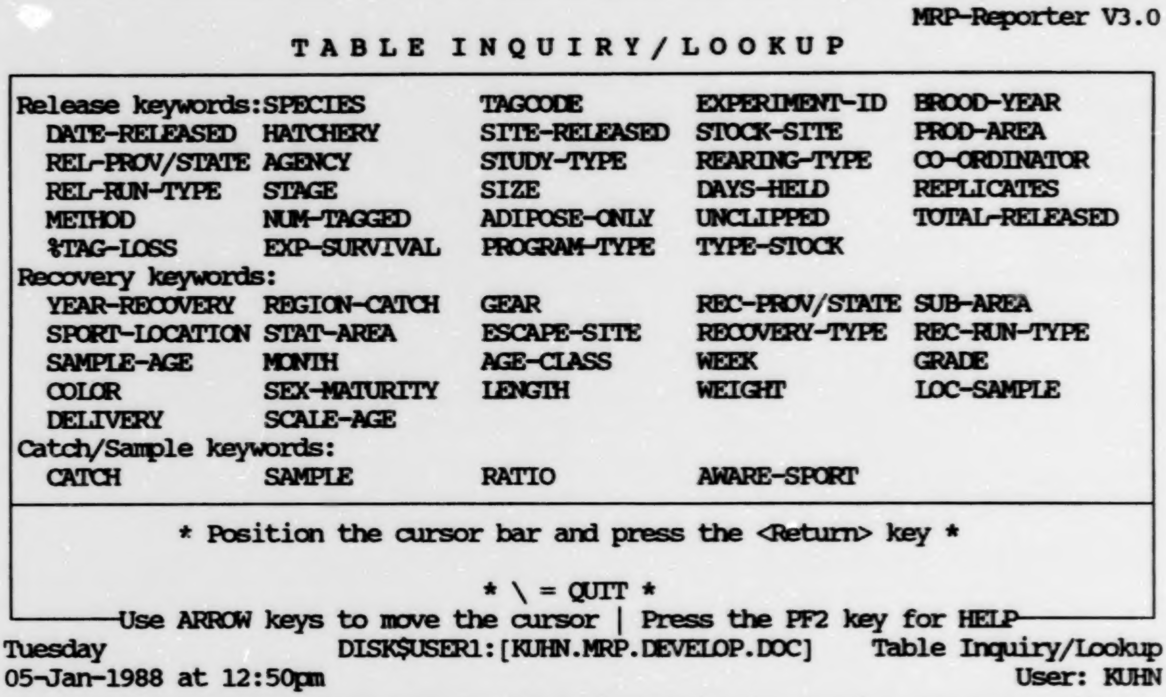
When this menu item is selected, the MRP-Reporter program presents a pop up menu listing the query/dump programs that are available:

```
+-----QUERY/DUMP PROGRAMS----------+
|1. Recoveries by Catch Region     |
|2. Release information            |
|3. Catch/Sample information       |
|4. Tag recoveries                 |
|5. Site list                      |
|6. Release data for Site          |
|7. Escapement Catch/Sample info   |
|8. Observed recovery SUMMARY      |
|9. Scan SITES for MRP & PSC info  |
|                                  |
|Q. QUIT to MRP Access Menu        |
+----------------------------------+
```

10.3. TABLE INQUIRY/LOOKUP

To become familiar with the contents of the MRP database, users should run the "Table Inquiry/Lookup" menu item from the System Access menu. This function provides the means for examining the value tables associated with each database field.

When this function is executed, the MRP-Reporter program displays the accessible database field names (keywords) for the user to choose from:



```
                                                        MRP-Reporter V3.0
                     TABLE INQUIRY/LOOKUP
┌───────────────────────────────────────────────────────────────────────┐
│Release keywords:SPECIES      TAGCODE       EXPERIMENT-ID  BROOD-YEAR   │
│  DATE-RELEASED  HATCHERY     SITE-RELEASED STOCK-SITE     PROD-AREA    │
│  REL-PROV/STATE AGENCY       STUDY-TYPE    REARING-TYPE   CO-ORDINATOR │
│  REL-RUN-TYPE   STAGE        SIZE          DAYS-HELD      REPLICATES   │
│  METHOD         NUM-TAGGED   ADIPOSE-ONLY  UNCLIPPED      TOTAL-RELEASED│
│  %TAG-LOSS      EXP-SURVIVAL PROGRAM-TYPE  TYPE-STOCK                  │
│Recovery keywords:                                                      │
│  YEAR-RECOVERY  REGION-CATCH GEAR          REC-PROV/STATE SUB-AREA     │
│  SPORT-LOCATION STAT-AREA    ESCAPE-SITE   RECOVERY-TYPE  REC-RUN-TYPE │
│  SAMPLE-AGE     MONTH        AGE-CLASS     WEEK           GRADE        │
│  COLOR          SEX-MATURITY LENGTH        WEIGHT         LOC-SAMPLE   │
│  DELIVERY       SCALE-AGE                                              │
│Catch/Sample keywords:                                                  │
│  CATCH          SAMPLE       RATIO         AWARE-SPORT                 │
├───────────────────────────────────────────────────────────────────────┤
│          * Position the cursor bar and press the <Return> key *        │
│                                                                        │
│                             * \ = QUIT *                               │
└──────Use ARROW keys to move the cursor | Press the PF2 key for HELP────┘
Tuesday               DISK$USER1:[KUHN.MRP.DEVELOP.DOC]   Table Inquiry/Lookup
05-Jan-1988 at 12:50pm                                              User: KUHN
```

Figure 10.1 - The "Table Inquiry/Lookup menu"

Moving the cursor to a field/keyword and pressing the <Enter> key, causes a value table to be displayed (if available) in a pop up window. Alternatively the field/keyword name can be typed in to view a field value table. There are some special cases that involve specifying a portion of a table to view. These are:

TAGCODE: user is prompted for a tag code; release information is displayed for the tag code

HATCHERY, SITE-RELEASED, STOCK-SITE, ESCAPE-SITE:
user is prompted for site names and/or codes

SPORT-LOCATION:
user is prompted for a range of sport location codes

To return back to the System Access Menu, the user should press the "\" (backslash) key.

10.4. STATUS INFORMATION

The MRP database is continually being updated. A facility is provided which lists the datasets that have been completed to date. This function is accessible through the "Database completion status" option under the STATUS INFORMATION option in the System Access menu. Executing this function opens a window allowing the user to scroll through the list of completed datasets.

A second status program is available to provide a detailed description of the status of the catch/sample, commercial and sport recovery, and escapement database components. This information is provided by recovery (catch) year and is acquired interactively.

Selecting the STATUS INFORMATION function from the System Access menu, pops up a sub-menu allowing selection of the status information.

```
      STATUS INFORMATION
1. Database completion status
2. Detailed database status

Q. QUIT to MRP Access Menu
```

10.5. NEWS BULLETIN BOARD

When the MRP-Reporter program is run, it checks for unread news/messages for the user running the program. If an unread message is detected, the program opens a window to notify the user of the unread message(s):

```
          * MRP Notice *
There is some current MRP news.
To read it, execute menu item:
       News bulletin board

Press any key to continue...
```

News/messages can be read via the "News bulletin board" function in the System Access menu. Executing this function opens up a menu listing the currently available messages (including previously read messages). After selecting a message from the menu, the program presents the message in a Display window where the user can scroll through the text.

10.6. INTERACTIVE GRAPHICS PROGRAM

The VAX computer at PBS has a graphics presentation program available. This graphics program (called CDFO-Graphics) has the ability to read in data files that are created by the Spread Sheet Maker module in the MRP-Reporter program. Preliminary documentation is available by writing to:

CDFO-Graphics Documentation

Brian R. Kuhn
Department of Fisheries and Oceans
Pacific Biological Station
Nanaimo B.C. V9R 5K6
Canada

When this function is executed from the System Access menu, the program runs CDFO-Graphics. On termination of CDFO-Graphics, program execution returns to the System Access menu.

Glossary

FLAT FILE:
This is a standard text file containing one record of data per line in the file. A flat file is a binary or indexed file that is "flattened" by converting the data records to standard ASCII format. Additionally, all records have the same format.

HORIZONTAL MENU:
A horizontal menu is a list of command names listed on a single horizontal display line. Selecting a command from this type of menu is identical to the method used with "pulldown" menus (see below).

KEYWORD:
In the context of the MRP-Reporter program, keywords are closely related to database field names. Keywords can be restricted to value lists or ranges that pertain to the database fields they relate to. For example, the Spread Sheet Maker uses keywords to define the ROW variable; the report modules define sort orders and rollups using keywords.

PATH:
The path identifies the VAX/VMS disk and directory that file saves and retrieves will occur in/from.

PICK LIST:
A Pick List is a special implementation of a "window" (see **WINDOW** below) that provides the ability to choose a command, file name, or any other "item" from a matrix of items. If the window does not contain the entire matrix, the invisible portion can be "scrolled" (see **SCROLLING** below) into view.

POP UP:
Windows "pop up" on the screen overwriting the screen contents (see **WINDOW** below).

PULLDOWN MENU:
A pulldown menu is a particular implementation of a window. This type of menu uses a window containing a list of command names with one command per line. To select a command from the menu, strike the first letter of the command or use the arrow keys to move the cursor to the command and press the <Return> or <Enter> key.

RECOVERY:
When salmon catches are sampled for adipose fin clips, the heads of the clipped fish are removed and sent to a decoding laboratory to extract and decode the embedded CWT. These clipped fish are referred to as "observed recoveries" if the captured salmon contains a CWT and as "non-tag recoveries" if the tag doesn't exist, is lost, or unreadable. Sport recoveries are voluntarily turned in to head depots from which the heads are transported to decoding labs.

RELEASE:
Salmon reared artificially or tagged in the wild are "released" as an associated group. A release group normally will have a fraction of its total number tagged with a CWT or fin clipped with various fin combinations.

REPORT-SET:
Within the standard MRP reports, there is the capability to define up to twenty different reports for a single session (see also **SAVE-SET**). Each individual report definition is referred to as a "Report-Set", i.e. a set of report descriptions.

ROLLUP:
Rollups reduce the detail level of a report. A rollup is associated with a sorting level and removes one or more sort levels from the sort order, and by summarizing, reduces the printed detail.

ROW LEVEL:
To create a spreadsheet with the Spread Sheet Maker, a set of row levels must be defined for controlling the detail accumulation. These levels additionally define a sort order if sorting is required.

SAVE-SET:
A "Save-Set" is defined to be a collection of report, Spread Sheet Maker, or Flat File builder settings stored in a disk file. A Save-Set can be retrieved at a later date, allowing the user to continue on where the MRP-Reporter session was terminated for the Save-Set. A Save-Set can be retrieved into a different report format than the format it was saved in, thus allowing a report definition to be set up once and the report created in multiple formats (with minimal editing).

SCROLLING:
Scrolling is a term used when discussing **WINDOW** functions. Scrolling is the process of moving some screen lines out of a window and moving other screen lines into the window. This can be performed in an upward or a downward direction.

SELECTION LIST:
Selection Lists are similar to Pick Lists (see above) as they also display a matrix of items and allow the user to choose from the matrix. Whereas a Pick List provides the means for choosing a single item, a Selection List allows multiple items to be selected from a matrix.

SELECT RECOVERY:
A select recovery is a recovery found in a nonrandom sample. These recoveries can not be reported for estimated recovery data.

WINDOW:

A window is a rectangular portion of the computer display screen. It overlays the current contents of the screen when it is opened (created). A window is commonly referred to as "pop up" window as it pops up over the current screen. When the window is removed from the screen, the previous screen contents are restored.

Appendix A - SYSTEM REQUIREMENTS

In order to run the MRP-Reporter program, the terminal or microcomputer used must be set up correctly and be compatible with the host computer.

A.1. Host computer

The MRP database resides on a VAX series mini computer running with the VMS operating system. This computer is located at the Pacific Biological Station (PBS) in Nanaimo B.C. To use the MRP program, an introduction to VMS is necessary to use file names, batch queues, and how to "log on" to the VAX computer.

A.2. Types of terminals supported

Several types of terminals are supported. All terminals must at least be DEC VT100 compatible. Hard copy printer terminals will not function properly with the MRP-Reporter. Some common terminals that work properly are:

Digital Equipment Corp. (DEC)
VT100 series
VT200 series
VT300 series

Tektronics (TEK)
4105

A.3. Microcomputer as a terminal

For users that have access to a microcomputer (micro), there is the capability to make their micro "act" like a VT100 or VT200 series terminal. This is called "terminal emulation". Some popular terminal emulators that function properly are:

SmarTerm 240/241	♦ emulates VT52, VT100 and VT200 series terminals
CrossTalk XVI	♦ emulates VT52, VT100 series terminals
ZSTerm	♦ emulates VT100, VT200 series terminals

A.4. Communication speeds

The speed at which the terminal communicates with the host computer is very important. With a terminal running at a faster baud rate, the program can deliver better overall performance. Significant screen update delays may occur with baud rates lower than 2400. A rate of 4800 baud or higher is recommended.

A.5. IMPORTANT - <Tab> settings

The MRP-Reporter program utilizes a set of programming tools available in the VMS operating system. These tools use <Tab> characters extensively for screen management, therefore the <Tab> settings for the terminal being used must be set up in a particular way. The program sets initial <Tab> settings when executed. If this does not occur properly on your particular terminal, the <Tab> settings are provided here:

```
         T         T        T        T         T        T        T
1234567890123456789012345678901234567890123456789012345678901234567890

  T         T        T        T        T        T        T        T       T
1234567890123456789012345678901234567890123456789012345678901234567890123567890
```

To set the tabs, set a <Tab> stop at position nine and then every eight positions set a <Tab> stop.

Appendix B - KEYBOARD USAGE

There are several control key strokes and other special keyboard keys needed to benefit from the flexible program navigation built into the MRP-Reporter program.

<PF1>: 1) **ENTERING A CHARACTER STRING**
If more than one string is being entered, this keystroke completes the entry of the strings.
2) **SELECTION LISTS**
Toggles between MOVE and SELECT or UN-SELECT modes. If the mode is currently SELECT and the <PF1> key is pressed, the mode is changed to MOVE. Pressing <PF1> again changes the mode back to SELECT. The UN-SELECT mode works in the same manner.

<PF2>: **HELP KEY**
Pressing this key gives a brief description of the current program command state.

<PF3>: **STATUS KEY**
This key is available while setting up restrictions from the Report Setup menu. A status window opens up, displaying the currently restricted field/keyword names for each Report-Set or Column.

<PF4>: **REFRESH KEY**
Pressing this key at any place in the program refreshes the contents of the screen. If running the program and another VAX user sends electronic mail, the notification message will destroy a portion of the current screen. This function exists to repair the screen.

<Return> or
<Enter>: 1) **MENUS**
Executes the currently highlighted menu item.
2) **ENTERING A CHARACTER STRING**
Completes the entry of the string. If there are more strings to enter, the cursor will move to the next one.

<Backspace>: 1) **ENTERING A CHARACTER STRING**
Deletes the character to the left of the cursor, pulling all characters right of the cursor one character position left.

<Up-Arrow>, ↑: 1) **SELECTION LIST, PULLDOWN, VERTICAL, and MULTI MENUS**
Moves the cursor to the menu item immediately above the current item. If the current item is the first item, the cursor is moved to the last item in the column or menu.

2) **ENTERING A CHARACTER STRING**
Completes the entry of the string. If the string is one of several being entered, the cursor will move to the previously entered string.

3) **DISPLAY WINDOW**
Scrolls display lines that have scrolled off the top of the window into view within the display window.

4) **PICK LIST**
Moves the cursor up to the item immediately above the current item. If the cursor is in the top display line of the window, the previously displayed line will be scrolled into view (if one exists).

<Dn-Arrow>, ↓: 1) **SELECTION LIST, PULLDOWN, VERTICAL, and MULTI MENUS**
Moves the cursor to the menu item immediately below the current item. If the current item is the last item, the cursor is moved to the first item in the column or menu.

2) **HORIZONTAL MENUS**
The down arrow converts to an <Enter> key, executing the currently highlighted menu item.

3) **ENTERING A CHARACTER STRING**
Completes the entry of the string. If the string is one of several being entered, the cursor moves to the next string to enter.

4) **DISPLAY WINDOW**
Scrolls display lines that have scrolled off the bottom of the window into view within the display window.

5) **PICK LIST**
Moves the cursor down to the item immediately below the current item. If the cursor is in the last display line of the window, the next display line scrolls into view (if one exists).

<Lft-Arrow>, ←: 1) **PULLDOWN MENUS**
The current pulldown menu is closed and the pulldown menu immediately to the left (if one exists) is pulled down and execution continues in this menu.
2) **PICK and SELECTION LISTS, HORIZONTAL and MULTI MENUS**
Moves the cursor to the menu item immediately to the left of the current item. If the current item is the first item, the cursor moves to the last item in the row or menu.
3) **ENTERING A CHARACTER STRING**
Moves the cursor one character position to the left.
4) **DISPLAY WINDOW**
Performs a <Page-Up> function. This displays the previous "page" of display lines where a "page" is dimensioned to the number of displayable lines in the window.

<Rgt-Arrow>, →: 1) **PULLDOWN MENUS**
The current pulldown menu is closed and the pulldown menu immediately to the right (if one exists) is pulled down and execution continues in this menu.
2) **PICK and SELECTION LISTS, HORIZONTAL and MULTI MENUS**
Moves the cursor to the menu item immediately to the right of the current item. If the current item is the last item, the cursor moves to the first item in the row or column.
3) **ENTERING A CHARACTER STRING**
Moves the cursor one character position to the right.
4) **DISPLAY WINDOW**
Performs a <Page-Dn> function. This displays the next "page" of display lines where a "page" is dimensioned to the number of displayable lines in the window.

<Ctrl-C>: **SOFT ABORT KEY**
Pressing <Ctrl-C> at any place in the program, opens an "interrupt" window. This keystroke allows abortion of the program execution. From the interrupt window the program prompts for confirmation of the request to abort execution. This keystroke is noticed only if the program is currently awaiting your next command.

<Ctrl-Y>: **HARD ABORT KEY**
This keystroke aborts the program execution in a permanent manner. Once the program has terminated execution, the current program state is lost, i.e. all restrictions and selections entered are lost. This keystroke can be issued at any time during the course of program execution and should be used if the program appears to be suspended for a lengthy period of time.

<Ctrl-B>:	1) **HORIZONTAL, VERTICAL, PULLDOWN, and MULTI MENUS** Positions the cursor at the top or beginning of the menu. 2) **ENTERING A CHARACTER STRING** Positions the cursor at the first or beginning character position in the string.
<Ctrl-E>:	1) **HORIZONTAL, VERTICAL, PULLDOWN, and MULTI MENUS** Positions the cursor at the bottom or end of the menu. 2) **ENTERING A CHARACTER STRING** Positions the cursor at the last or ending character position in the string.
<Ctrl-G>:	Deletes the character at the current cursor position when entering a character string. All characters located to the right of the cursor are pulled to the left one character position.
<Ctrl-D>:	Deletes all characters from the current cursor position to the end of the string when entering a character string.

Appendix C - DATABASE FIELDS/KEYWORDS

The MRP-Reporter program allows restrictions to be imposed on Release, Recovery, and Catch/Sample data fields by reference keywords.

C.1. Release fields/keywords

SPECIES: (Hart code)

- 3 digits indicating a page number in Hart's book of species. For example, code 115 indicates Coho, which is described on page 115 of Hart's book. The MRP-Reporter program allows the user to restrict the species field using the species code and name. The possible codes are:

108 - Pink	112 - Chum	115 - Coho
118 - Sockeye	124 - Chinook	126 - Masu
127 - CutThroat	128 - Steelhead	

Reference: Hart, J.L., 1973. Pacific fishes of Canada. Fish Res. Bd. of Can., Bull 180, Ottawa, Canada.

TAGCODE:

- Up to 12 characters defining AG, D1, D2, D3, and D4 where AG is the agency microcode and D1, D2, D3, and D4 are the data codes. Each of these five elements uses two characters. The final two characters (when used) indicates a tag code used in multiple releases. For example, if 022192 has been used and another release is made with this tag code, the new tag code would be 022192*1, etc.

EXPERIMENT-ID:

- 4 characters associated with a group of one or more tag codes to identify a particular tagging experiment. This code is determined by the tagging co-ordinator.

BROOD-YEAR:

- 2 digits defining the year in which salmon from the release were spawned. For example "86" refers to 1986.

DATE-RELEASED:

- This field consists of two sub fields which consist of a further three sub fields. The first two parts are the first date of release and the last date of release. Each of these dates are further sub-divided into day, month, and year (two digits each).

HATCHERY:

- 4 digit code defining the hatchery in which the release was raised. In the database, this number is kept in a sites file, currently containing approximately 2000 entries. In the sites file there is a name associated with each hatchery number.

SITE-RELEASED:

- 4 digit code defining the release site where the group of fish was released. The site number is kept in the database sites file as the hatchery numbers are.

STOCK-SITE:

- 4 digit code defining the site where the brood stock for the release was taken. This number is kept in the database sites file as the hatchery and release site numbers are.

PROD-AREA: (Production area)

- 4 character code representing a geographical hatchery, release, or stock area. When restricted, the MRP-Reporter program rejects all release records that don't have a production area code in at least one of these area types for the specified restriction list.

REL-PROV/STATE: (Releasing province or state)

- 2 character code defining the province or state of release. The list of possible values is:

BC - British Columbia
WA - Washington
AK - Alaska
CA - California
YU - Yukon Territory
OR - Oregon
ID - Idaho

AGENCY:

- 4 character code defining the releasing agency. The agency micro-code in the tag code is associated with this field. However, an agency can use more than one microcode for it's releases.

STUDY-TYPE:

- 1 character code defining the purpose of tagging.

P - typical hatchery production
E - experimental fish - unusual rearing/release conditions
B - experimental groups which can also be considered production e.g. experimental controls
M - monitoring (key or index streams)
U - unknown

Here, the type "M" indicates an index population used for international stock monitoring.

REARING-TYPE:

- 1 character code defining the rearing environment of the release group.

H - hatchery; seapen, lakepen, rearing channel.
W - wild unfed
F - wild fed (held short term in pens in river prior to release)
U - unknown

CO-ORDINATOR:

- 2 digit code defining the release co-ordinator number. This number references the person in charge of the release.

REL-RUN-TYPE: (Release run type)

- 1 digit code for the season in which the majority of broodstock adults leave the marine environment and enter fresh water on the spawning migration. For example, a fall chinook returns to spawn in the fall. The possible codes are:

1 - Spring (March to May inclusive)
2 - Summer (June to August inclusive)
3 - Fall (September to November inclusive)
4 - Winter (December to February inclusive)
5 - Uncertain extent of timing overlap
6 - Land-locked

STAGE: (Release stage)

- 4 character code defining the stage of fish growth at the time of release.

EE = eyed egg
UF = unfed fry
UFC = unfed fry channels
FF = fed fry
FFS = fed fry seapen
FFL = fed fry lake
YE = yearling
SM = smolt
SSM = seapen smolt
UNKN = unknown stage

SIZE: (Release size)

- There are two release size data fields available. They are length and weight data fields. The length measurement units are millimeters and the weight measurement units are grams per fish. Both size fields are not necessarily present for a given release because they aren't always measured for every release. The length data is stored as an integer or whole number field and the weight data is stored as a floating point or real number field.

- To restrict this keyword, the user enters a numeric range and all release records with the LENGTH or WEIGHT field within the specified range pass this restriction test.

DAYS-HELD:

- Up to 3 digits defining the number of days the tagged fish were held before being examined for tag loss.

- To restrict this keyword, the user enters a numeric range and all release records with the DAYS-HELD field within the specified range pass this restriction test.

REPLICATES:

- 2 digits defining the number of embedded replicate codes used with this tag code, if applicable.

- To restrict this keyword, the user enters a numeric range and all release records with the REPLICATES field within the specified range pass this restriction test.

METHOD:

- 1 character defining the method used for calculating the "Un-Marked" number associated with the release.

B - Book
P - Peterson Estimate
W - By Weight/Volume
C - Physical Count
U - Unknown

NUM-TAGGED: (Number tagged)

- The number of fish in the release group that were released with CWTs.

- To restrict this keyword, the user enters a numeric range and all release records with the NUM-TAGGED field within the specified range pass this restriction test.

ADIPOSE-ONLY:

- The number of fish in the release group that lost tags during the observation period prior to release.

- To restrict this keyword, the user enters a numeric range and all release records with the ADIPOSE-ONLY field within the specified range pass this restriction test.

UNCLIPPED:

- The number of fish released without tags or adipose fin clips.

- To restrict this keyword, the user enters a numeric range and all release records with the UNCLIPPED field within the specified range pass this restriction test.

TOTAL-RELEASED:

- The number of fish in the release group that were released (tagged or untagged). This field is the sum of the NUM-TAGGED, ADIPOSE-ONLY, and UNCLIPPED fields above; that is, the total number released is the sum of those tagged, those that lost tags, and those unmarked.

- To restrict this keyword, the user enters a numeric range and all release records with the TOTAL-RELEASED field within the specified range pass this restriction test.

%TAG-LOSS:

- Represents the percentage of tagged fish which lost tags during the holding period. This number is derived from the NUM-TAGGED and ADIPOSE-ONLY fields above as follows:

100 * ADIPOSE-ONLY / (NUM-TAGGED + ADIPOSE-ONLY)

EXP-SURVIVAL: (Expected survival)

- Represents the expected percentage survival to adulthood of fish in this release. This number is a estimate, based on the size and time at release, as well as the general condition of the fish. Usually, the number comes from a list of proposed bio-standards used in enhancement planning. There is also a survival flag which provides a description of the expected survival:

N = Normal range expected
D = Destroyed fish, no survival expected
W = Warning, serious problems

- To restrict the expected survival percentage, the user enters a numeric range and all release records with the EXP-SURVIVAL PERCENTAGE field within the specified range pass this restriction test. To restrict the expected survival flag, the user selects one or more of the flags available.

PROGRAM-TYPE:

- 3 character code defining the type of enhancement program responsible for this release.

OPS - Enhancement Operations
SPU - Small Projects Unit
CDP - Community Economic Development
PIP - Public Involvement Program
RES - Research
PRV - Province of B.C.

TYPE-STOCK:

- 1 character code defining the stock type of a release. For example, a release group could be taken from the WILD (TYPE-STOCK), raised in a HATCHERY (REARING-TYPE), and also be a PRODUCTION study type (STUDY-TYPE).

H - Hatchery
W - Wild
M - Mixed
U - Unknown

C.2. Recovery fields/keywords

Currently there are recovery data for four recovery methods: troll, net, sport, and escapement. The letters T, N, S, or E in square brackets indicate which of these four methods apply to each field.

TAGCODE: [T N S E]

- TAGCODE is not included as a "Recovery field/keyword" because for restriction purposes the user need only restrict TAGCODE once. There is, however, one difference between release and recovery tag codes. At release, the tag code is always known whereas on recovery, due to circumstances such as tag loss, the tag code may not be known. Therefore, it is necessary to devise codes for unknown tags. Currently, the list of possible non-tag codes is:

Code:	Meaning:
NP-nnn	no pin
LP-nnn	lost pin
ND-nnn	no data
CO-nnn	unreadable color
RE-nnn	rare earth
BI-nnn	unreadable binary code

In each case, "nnn" refers to the 3-digit species Hart code.

YEAR-RECOVERY: [T N S E]
- 2 digits defining the year in which the tag was recovered. For example, "84" represents 1984.

REGION-CATCH: [T N S E]
- A 3 digit number or a name consisting of up to 20 characters defining the catch region in which the fish was recovered. The definition of catch region combines several statistical areas with a gear type.

GEAR: [T N S]
- 2 digit code defining the gear used in catching the fish. The list of possible codes is:

07 - Sport
10 - Gillnet
15 - Mixed net
20 - Seine
30 - Troll general
31 - Troll freezer
32 - Troll day
33 - Troll ice

REC-PROV/STATE: (Recovery province or state)
(currently not available)

SUB-AREA: [T N]
- 3 digit code defining a catch sub-area within the statistical area. This field is frequently missing.

SPORT-LOCATION: [S]
- 7 character code defining the location where a sport recovery actually occurred. Sport locations have associated latitudes and longitudes.

STAT-AREA: [T N S]
- 3 character code defining the statistical area in which the fish was caught. New areas are often defined as combinations of old ones. For example, catch from a troller fishing in several statistical areas is reported in a combined area.

ESCAPE-SITE: [E]
- 4 digit code defining the release site in which the recovery was recovered. In the database, this number is kept in a sites file, which currently contains about 2000 entries. In the site file there is a name associated with each ESCAPE-SITE number.

RECOVERY-TYPE: [T N S E]

- 1 character code defining the type of recovery. This code indicates both the recovery method and the random (or nonrandom) nature of the recovery. A random recovery is associated with a random sample. A nonrandom recovery corresponds to a marked fish that was selectively recovered. Valid codes are listed below:

blank: Random commercial, 1975-78
0-9 : Random commercial, 1979-83
D : Random commercial, 1984-present
L : Random commercial logbook
R : Random escapement
Z : Sport (treated as random)
T : Nonrandom commercial logbook (strap)
H : Special commercial logbook
F : Nonrandom cummercial freezer logbook
S : Nonrandom SELECT Non Sport

REC-RUN-TYPE: (Escapement sample period) [E]

- 1 digit code defining the time of year when an escapement recovery occurred:

0 - Yearly
1 - Spring
2 - Summer
3 - Fall
4 - Winter

More precisely, "0" means the sample period isn't reported; therefore it is considered to be yearly.

SAMPLE-AGE: [E]

- 1 character code indicating the age type of the fish. Escapement samples are typically stratified by age type. For example, a sample might be oriented entirely toward jacks (2 year olds). In the inevitable cases where the observed age (from the CWT) differs from the sample age type, corrections are made to sample size, etc. The database includes all such adjustments. Possible age type in relation to age are:

Type	Age
A - Adult	>= 3 years
J - Jack	= 2 years
I - Immature	= 1 years
M - Mixed	>= 1 year; i.e., not sampled by age

Total age can be calculated as the recovery year minus the brood year.

MONTH: [T N S]

- 2 digits defining the calender month in which the recovery occurred. This data field is extracted from the database field "Statistical Week". Statistical week is a 3 digit field defining MMW, where MM (01 to 12) indicates the calender month and W (0 to 6) indicates week within month. This keyword only uses the MM portion of the statistical week field.

AGE-CLASS: [T N S E]

- This is a calculated field not an actual database field. The MRP-Reporter program allows the user to restrict on this field to make age dependent requests much simpler. This keyword actually consists of two parts, the age type and the age list. There are two age types available, TOTAL AGE or OCEAN AGE, calculated as follows:

TOTAL AGE = Recovery year - Brood year
OCEAN AGE = Recovery year - Release year

WEEK: [T N S]

- 3 digits defining the week within month in which the recovery occurred. Statistical week is a 3 digit field defining MMW (see **MONTH** above). The week portion (W) of MMW ranges from 0 to 6. A "0" indicates a missing week value and occurs frequently for sport recoveries. A "6" is only valid for sport recoveries and occurs infrequently.

GRADE: [T N]

- 1 character code representing the grade category related to the weight or size of the fish recovered. This applies only to chinook, and must be interpreted in relation to the gear type used.

Grade Code	Troll weight range (gears 30,31,32,33)
U	N/A
S	0 lb <= weight < 8 lb
M	8 lb <= weight < 12 lb
L	12 lb <= weight

Grade Code	Net weight range (gears 10,15,20)
U	0 lb <= weight < 2 lb
S	2 lb <= weight < 5 lb
M	5 lb <= weight < 12 lb
L	12 lb <= weight

COLOR: [T N]

- 1 digit code used only for chinook salmon, to indicate the flesh color:

1 - Red   2 - White   3 - Mixed

SEX-MATURITY: [T N E]

- 2 digits defining the maturity/sex of the recovered fish. For troll recoveries this field is not normally available.

00 - not examined	
01 - immature female	02 - mature female
03 - immature male	04 - mature male
05 - examined, but unknown	

LENGTH: [T N]

- This keyword consists of two parts, the length code and the length measurement. A 1 digit length code indicates the length measurement method:

0 - unknown (no length recorded)
1 - fork length
2 - hyperal length
3 - total length

- 4 digits are used to report the length (in millimeters) of the fish recovered, as indicated by the length code.

- To restrict the length measurement, the user enters a numeric range and all recovery records with the LENGTH field within the specified range pass this restriction test.

WEIGHT: [T N]

- This keyword consists of two parts, the weight code and the weight measurement. A 1 digit weight code indicates the weight measurement method:

0 - unknown (no weight recorded)
1 - round weight
2 - dress weight

- 5 characters (4 digits and a decimal : ddd.d) are used to report the weight (in kilograms) of the fish recovered, as indicated by the weight code.

- To restrict the weight measurement, the user enters a numeric range and all recovery records with the WEIGHT field within the specified range pass this restriction test.

LOC-SAMPLE: [T N]

- 4 character code identifying the geographic commercial sampling location (currently, there is no table available).

DELIVERY: [T N]

- 1 character code defining how commercial recoveries arrive at a sampling site.

V - Vessel lands fish at sampling site
T - Truck delivers fish from Vessel or Packer to sampling site
P - Packer lands fish at sampling site

SCALE-AGE: [T N E]

- 1 digit defining the age of the fish determined using the scale aging method.

C.3. Catch/Sample fields/keywords

Catch/Sample data fields are used to restrict recoveries using catch and sample sizes or ratios for commercial and sport recoveries.

CATCH: [T N S]

- This field contains the total estimated catch (or escapement) associated with the stratum of the recovery.

- To restrict the catch size, the user enters a numeric range and all recovery records with the CATCH field within the specified range pass this restriction test.

SAMPLE: [T N S]

- This field contains the total number of fish examined in the stratum for a clipped adipose fin. Thus, this field contains the sample size associated with the stratum.

- To restrict the sample size, the user enters a numeric range and all recovery records with the SAMPLE field within the specified range pass this restriction test.

RATIO: [T N]

- The catch to sample ratio is used for estimating commercial recovery counts. This is calculated by dividing the catch by the sample size which normally produces a number greater than or equal to 1.0. This represents the sampling rate used for a particular stratum.

- To restrict the ratio calculation, the user enters a numeric range and all recovery records with the associated RATIO calculation within the specified range pass this restriction test.

AWARE-SPORT: [S]

- For sport recoveries, a fisherman awareness factor is used for estimating recovery counts. This number is normally less than 1.0 and greater than or equal to 0.0. It represents the chances of a fisherman voluntarily submitting a fish head from an adipose fin clipped sport recovery to a DFO head depot for a particular stratum. For example an awareness factor of 0.252 means that a given observed recovery in a particular stratum represents 25% of all recoveries in the stratum.

C.4. Other data fields (not keywords)

In addition to the data fields that define detailed release and recovery records, there exist several summary data fields in the database. These fields are created from the detailed recovery records during the "build" job which builds the database from the "raw" MRP data records.

The Flat File builder report appends these summary data fields to the end of each "flat" recovery record and therefore are accessible from the MRP reporting system.

NUMBER of KNOWN TAGS: [T N S E]

- This field represents the total number of CWTs for all tag codes successfully decoded within the stratum. Known tags all have codes other than the non-tag codes cited in connection with the **TAGCODE** field described above.

NUMBER of NO-PINS: [T N S E]

- This field represents the total number of no-pin recoveries for the stratum. A no-pin recovery corresponds to fish with an adipose finclip but no locateable CWT. It's tag code (see **TAGCODE** described above) would be represented by "NP-nnn".

NUMBER of LOST-PINS: [T N S]

- This field represents the total number of lost-pin recoveries for this stratum. A lost-pin recovery occurs when a CWT is located but either (1) is lost before it is read or (2) is unreadable. To be precise, this field contains the total number of the following non-tag codes (see **TAGCODE** described above) recovered in the stratum: "LP-nnn", "CO-nnn", "RE-nnn", and "BI-nnn".

NUMBER with NO DATA: [T N S]

- This field represents the total number of no-data recoveries for the stratum. A no-data recovery occurs when (1) a fish has an adipose fin clip but no effort is made to locate a CWT or to read it, (2) the head is lost before it reaches the decoding laboratory, or (3) there is a data conflict that cannot be resolved (e.g., a chinook appears to be 20 years old). No-data recoveries have the non-tag code "ND-nnn" in the **TAGCODE** field.

NUMBER SPORT MARKS in SAMPLE: [S]
- This field represents the number of adipose clipped fish observed in the sample for the stratum. Both this field and the **SAMPLE** field are associated with ramp interviews; this field gives the number of marks observed in the sample.

ESTIMATED MARKS in the ESTIMATED SPORT CATCH: [S]
- This field represents the estimated number of marks in the estimated sport catch for the stratum. This field can be calculated as follows:

"Number Sport Marks in Sample" * ("Catch" / "Sample")

NUMBER of OBSERVED SPORT RECOVERIES: [S]
- This field represents the number of heads voluntarily turned in to sport head depots for the stratum (excluding No-pins). This field can be calculated as follows:

"Number of Known tags" + "Number of Lost-Pins" + ND^*

where:

ND^* = a fraction of the "Number with No data" field
(see tables 5.3a, 5.3b, 5.3c)

SUM of ESCAPEMENT NON-TAGS, excluding NO-PINS: [E]
- This field represents the total number of non-tags, excluding no-pins, for this stratum. This field would be the sum of fields "Number of lost-pins" and "Number with no data" above, if these numbers were available for this recovery method. However, for escapement recoveries, the non-tags are not separated into these two categories (lost-pins and no data) only the total is recorded.

Appendix D - VAX/VMS ERROR MESSAGES

There are several types of error messages that can occur during the course of using the MRP-Reporter program. Most of these errors can be avoided by following the rules.

INSUFFICIENT DISK QUOTA:

This error can occur when a Save-Set file is being saved, a command job file is being created, or when a report is executing and there is insufficient disk space available in the user account.

To resolve this problem more disk quota must be allocated to the user account.

INSUFFICIENT VIRTUAL ADDRESS SPACE QUOTA:

When the report programs run, they attempt to allocate memory from the VAX computer system which can not exceed the quota assign to the user account. If the user account has a quota that is lower than what the report program requires, then the VAX system will abort the program execution and display a message for this problem.

The user account quota must be increased to overcome this problem.

INSUFFICIENT PRIVILEGE:

1. The most common occurrence of this error would be when a user attempts to execute a command job from the WORKAREA user account and the command job was originally created in the user's personal account (or visa versa).

2. Another common reason for this error is attempting to save a Save-Set file in another user's disk directory or retrieve a Save-Set file from a user directory where the file protection setting disallows this operation. Additionally if a command job is created in one user directory and copied to a different user directory, attempting to execute it will cause this error to occur.

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